

SEPTEMBER 1922 No 200

Monthly

A Reference for Buyers

HITCHCOCK'S
**MACHINE
TOOL LIST**

Distributed Free to Machine Tool
Users Everywhere in the United States and to
Dealers in American Machinery Abroad

Published by
A·H·HITCHCOCK
1220-1235 Caxton Building
Chicago

FOR INDEXES SEE LAST PAGES

TO CHANGE
THE SPEED TURN
THE HAND WHEEL

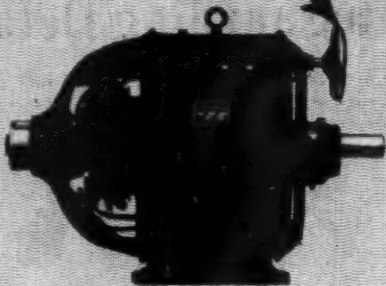


These are truly "any speed" motors. You are not limited to a few fixed speeds but can get any imaginable speed within high and low limits of motor.

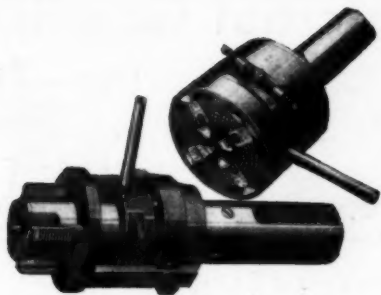
RELIANCE ELECTRIC & ENGINE CO.

1050 Franklin Road, Cleveland, Ohio

BRANCHES: Boston, New York,
Philadelphia, Pittsburgh, Chicago,
Cincinnati, Detroit



Type **A.S.** Adjustable Speed
RELIANCE MOTORS



Safeguarding Details

Threading operations some times involve only a fractional part of the time required to finish a part.

But the importance of good threads is easily recognized in the final assembly work.

The use of NAMCO COLLAPSING TAPS and SELF-OPENING DIES insures the careful safeguarding of just such details.

A catalog will explain why

THE NATIONAL ACME CO.
CLEVELAND, OHIO

NEW YORK BOSTON CHICAGO DETROIT BUFFALO

Internal Grinding



Internal Auto Feed



Internal Hand Feed

Regardless of the nature of your work, size, shape or material, Heald's extensive line of internal grinders allows you to choose just the type of machine you want for your particular job.

Our Service Department will be glad to receive samples or blue prints and suggest the proper machine, holding fixtures, speeds, wheels and all other data to give you maximum results at minimum cost.

The Heald Machine Co.

6 New Bond St.,

Worcester, Mass.



Small Internal



Cylinder Grinder

DUMORE

GEARED ELECTRIC

DRILLS

IT would pay you to have this handy DUMORE Geared Electric DRILL in your tool room. Aside from using it for delicate drilling jobs, you could have it do all the fine drill work your big machines are now doing—keeping them busy on heavier operations. Increased output at decreased production costs would soon be realized.

Quickest to the job where needed most, the first to finish the task best, this No. 2BD bench drill offers many economic advantages which keen buyers are quick to appreciate.

*Have your dealer show
you what it can do!*

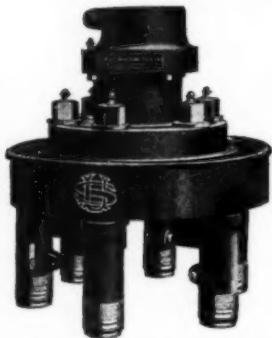
WISCONSIN ELECTRIC COMPANY
4349 SIXTEENTH ST., RACINE, WIS.

**Model 2BD
Bench Drill**



Turn Your Single Spindle Drill

Into A Multiple Spindle



With a
**U. S.
Multiple
Spindle
Drill
Head**

Having
Adjustable
or Fixed
Spindles

ADJUSTABLE SPINDLE HEADS, as shown in the picture, are regularly furnished with 2 to 6 spindles. Special Heads made to order. Their patented double adjustment of spindles permits drilling in any pattern—in squares, triangles, rectangles, ovals, straight line or staggered.

FIXED SPINDLE HEADS of any practicable type are also made to order. Both the Adjustable or Fixed Spindle Heads drill several holes at the same speeds and feeds you use for drilling one.

*Send us a layout of your drilling operations
and let us tell you how much we can save you*

The United States Drill Head Co.

Cincinnati, Ohio, U. S. A.



Barnes Drills

8 to 50' Swing

State size you are interested in and we will gladly quote. This is our 20-inch Drill with wheel and lever feed. Can furnish self feed and back also.

We have made over 22,000 of this size drill—is very popular and there is a reason—it's the best 20-inch drill made for the money.

We make this Adjustable Arbor Press In three sizes

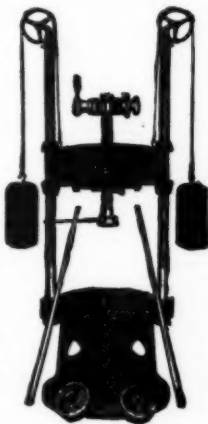
No. 1 size 12"x 24—\$100.00

No. 2 size 20 x 36— 175.00

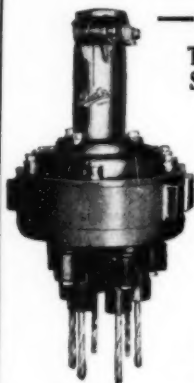
No. 3 size 30 x 36— 200.00

* Means 12 inches between side screws.

Frankly, this is not a cheap Arbor Press, but is strongly made and most convenient to operate—just a lot better than others.



W. F. and John Barnes Co.
123 Ruby St., Rockford, Ill.



— need a multiple?

Then use a "Buhr" on your
Single Spindle Drill Press

The arms can be rotated or moved in and out, and set-ups made for circular, rectangular or staggered positions.

Saves time—saves money—insures absolute duplication of pattern.

Also Fixed Spindle Drill Heads, both bronze and ball bearing.

Tell us what your work is and we'll tell you what we can do

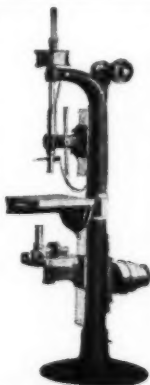
Nelson-Blanck Mfg. Co.
DETROIT, MICH.

New York Office: 50 Church St.

A Lot of Drilling Capacity—

This 16-inch, No. 7 Barr is a sturdy, reliable, highly efficient sensitive that will give you more service and satisfaction than you have ever bought for so small a sum. Takes drills up to $\frac{3}{4}$ -inch, and handles them effectively. It gets results.

Let us have your address for complete description.



FRANCIS REED CO., 43 Hammond St., Worcester, Mass.

The "Aurora"

The Drill with the "Pull"

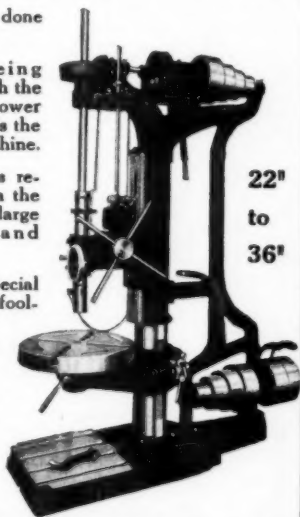
The actual work is done at the drill point.

Other things being equal, the drill with the greatest "pull", or power at the drill point, is the most efficient machine.

Superiority in this respect is secured in the "Aurora" by its large pulley diameter and ratio of gearing.

It also has other special features, such as a fool-proof table, which will not tilt if the operator forgets to clamp it; patented tapping attachment; automatic release worm wheel; enclosed positive gears, etc.

The "Aurora" is a rigid machine, without chatter; it has every desirable feature for rapid and efficient drilling; and as our overhead in this neck o' the woods is lighter than in most manufacturing centers, we are in position to offer you the most real drill value for the money.



Try us out with your inquiry; we'll do the rest

THE AURORA TOOL WORKS
Aurora, Indiana, U. S. A.



**No. 1 Ten Inch Sensitive
Bench Drill Press**

It's a Burke

The most used
Bench Drill Press
in the world

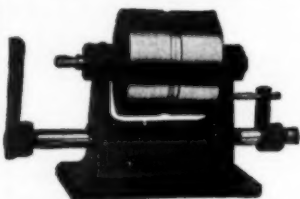
The Reason:—

**Burke
Quality**

PRICES:

Without swing- ing arm.....	\$22
With swinging arm.....	\$26
Motor Driven	\$55 to \$60

THE BURKE Friction Driven Tapping Machines



**Eliminate all
shock to the
tap and save
95% of your
tap breakage**

The most efficient machines made for work within their capacity. They are complete in themselves, yet cost less than the average tapping attachment.

*Send us samples or drawings of your tapping
jobs and let us give you production estimate*

The Burke Machine Tool Co.
297 East 16th St., Conneaut, Ohio



**Watch The Corners
Dollars Saved—Dollars Made**

Squeeze Your \$ Of Cost

Get An *Avey* Get all the Profit

**Drive To The Limit
Double Production—Half the Labor**

**The Avey Drilling Machine Co.
Cincinnati, Ohio**



"Pessimistic Man"

What must we do to convince you that SQUARE and HEXAGON holes can now be produced as easily and rapidly as round ones?

The "Watts Method" applied to this class of work has proven that it will save from 50% to 400% on production costs.

The initial cost is so small that it will well warrant your writing for our catalog, which illustrates and describes this line thoroughly.

Write today.

Sole Manufacturer and Patentee,

WATTS BROS. TOOL WORKS, Turtle Creek, Pa.,
U. S. A.

Barker Wrenchless Chuck

Saves Time Between Cuts

Speed of an air chuck, at far less cost, with special advantages that are all its own.



The work is centered automatically and chucked with one movement of lever. It holds delicate work as lightly as desired and the more substantial work with an unshakable grip, governed entirely by the lever pressure, which a child could operate. *It may also be used for bar work, changing from one size bar to another by a simple adjustment of jaws; slight variations require no adjustment.*

Write for description of this big time saver

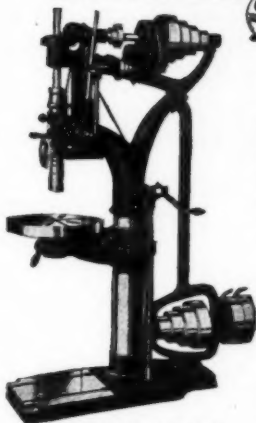
Thomas Elevator Company

CHUCK DIVISION

31 S. Hoyne Ave.,

Chicago, U. S. A.

CANEDY-OTTO



The C-O 21" Drill has 12" spindle travel. Distance from spindle to base 43". Bores to center 21 1/2" circle.

THE exceptional quality and low cost of Canedy-Otto shop equipment make it not only highly satisfactory but extremely profitable to operate. Repairs and depreciation are held at a minimum, while rate of output and quality of product are maintained at a level uniformly high. Every item is backed by 50 years of experience.

Write for catalog
Address Dept. D

CANEDY-OTTO MFG. CO.

Manufacturers of Automotive Equipment,
Drills, Punches, Shears, Shrinkers,
Countershafts, Grinders, Buffers,
Forges, Blowers, Tuyere Irons
and Blast Gates.

Main Office and Factory—Chicago Heights, Ill.
New York Office—Grand Central Palace

*"The Well Equipped Shop
Gets the Business"*

C-O Arbor Presses are built in five sizes, ranging from 3 to 30 tons capacity. This is the No. 1 Press, 3 ton cap., for bench work.



Spindles of highest grade steel, and unusually big bearings, burnished to exact fit, eliminate chattering in the No. 3 Floor Grinder. Tight or tight and loose pulleys are optional. Guards are extra.



"MICRO-SET" HAND Expansion Spiral Reamers

Cut Fast and Smooth

Will Reduce Your Reaming Costs



**Micrometer Expansion
Large Range of Expansion**

Unsurpassed for reaming Standard or Over-sized holes.

The reamer for production work. Also made with straight flutes and in all sizes.

Descriptive circular and price-list upon application

The Schellenbach-Hunt Tool Co.

116-124 Opera Place,

Cincinnati, Ohio

F. E. TIGHE SALES CO.
2953 Montgomery Ave.
Detroit, Mich.

**AGENTS
HAYDEN SUPPLY CO.**
1211 St. Clair Ave.
Cleveland, O.

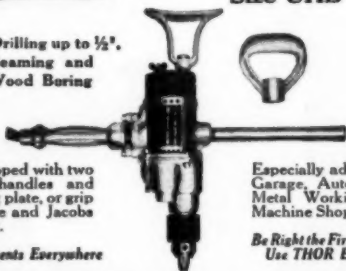
H. E. RARTON TOOL CO.
104-06 S. Jefferson St.
Chicago, Ill.

Thor

Portable Electric Drill

Size UHB

**For Drilling up to $\frac{1}{2}$ "
Reaming and
Wood Boring**



Equipped with two
side handles and
breast plate, or grip
handle and Jacobs
chuck.

Especially adapted to
Garage, Automobile,
Metal Working and
Machine Shop use.

Agents Everywhere

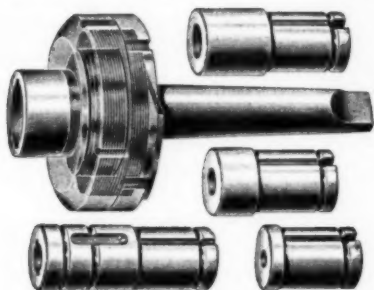
*Be Right the First Time—
Use THOR Electrics*

Independent Pneumatic Tool Co.
600 West Jackson Blvd.,

CHICAGO, ILL.

—for tough tapping jobs

Use "Safety" Tap Holders



And Prevent Tap Breakage

"SAFETIES" ENABLE any operator to drive taps at full speed to the bottom of a hole; in case of any undue strain the holder stops, and tap breakage is avoided. They are friction driven, and their dependable service is giving universal satisfaction.

Production is speeded up because the operator can change from tap to drill, or back, without stopping the spindle. Naturally, your shop costs are reduced.

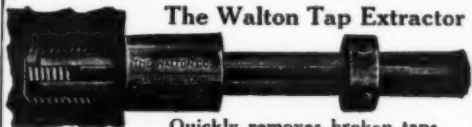
Regularly made in four sizes, 0 to 2½", but can be furnished with special sockets with friction set to carry one or two sizes of taps, which are especially useful where sizes are constantly changing.

"Safeties Always" is a good habit to adopt; it will save you taps, time, labor and money

The Beaman & Smith Co.
PROVIDENCE, RHODE ISLAND

Costs Little—Saves Much

The Walton Tap Extractor



Quickly removes broken taps

Taps often break at or below the surface of the work. That means more or less TROUBLE.

The Walton Tap Extractor TAKES OUT the trouble. Often saves its cost the first time used.

As we ship on 60 days' approval, what's the use of waiting? Certainly our offer is liberal enough.

Sizes No. 8 to 1½". Better order now.

THE WALTON CO., Hartford, Conn.



HERE IS A

No-Tap-Breakage Chuck

—that is highly endorsed wherever used, particularly by leading automobile manufacturers, who give it extremely hard usage.

The Woodstock Improved

—automatically releases tap the instant it binds or strikes bottom. Utilizes up to 99% of strength of tap, with positive assurance that it will not break. Saves time and money. Made in five sizes.

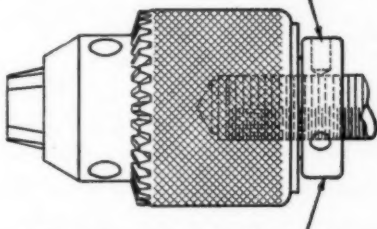
Ask us to send one on trial

Peter Bros. Mfg. Co., 115 Railroad St., ALCONQUIN, ILL.

ADAPTERS

For Fitting Jacobs Chucks To Breast Drills

Hole to fit handle on key.



The adapter is simply a lock-nut threaded to fit the spindle.

These adapters have been designed to meet the demand of users of breast drills for a drill chuck of the Jacobs Quality that will securely and accurately hold drills and can be operated with the ease for which this chuck is famous. Secure maximum efficiency from your breast drills by fitting a Jacobs Chuck to the spindle.

CHUCKS AND ADAPTERS ARE FURNISHED IN THE FOLLOWING SIZES:

CAPACITY	CHUCK MODEL	THREADED
0- $\frac{3}{8}$	No. 2B	7-16x22 V thread 9-16x24 V thread
0- $\frac{1}{2}$	No. 6B	9-16x24 V thread 5-8x24 V thread 7-16x22 V thread

Write for Descriptive Circular H-18

The Jacobs Manufacturing Co.
2074 Park Road, Hartford, Conn.

Over 100 Shapes and Sizes of
Armstrong Tool Holders

SAVE h. s. Steel, 90%; grinding, 70%; forging, 100%



STRAIGHT SHANK TURNING TOOL



We also make—all of Armstrong quality—

Ratchet Drills
 Drilling Posts
 Drill Drifts
 Drill Vises

Lathe Dogs
 Clamps
 Wrenches
 Planer Jacks

Bolt Drivers
 Tool Posts
 Drill Sleeves
 and Sockets

Glad to mail you the Catalogs; write for them

Armstrong Bros. Tool Co.

"THE TOOL HOLDER PEOPLE"

308 N. Francisco Ave., Chicago

Give Us A Trial

**On your next order for Hollow
 Bored Forgings and Steel Shafts**



When it comes to furnishing such items as *Lathe Spindles, Piston Rods, Rams, Clutch Shafts*, etc., you will find us a reliable source of supply, with dependable products, prompt deliveries and the right prices. If there's anything you need now, send along your blue-prints and we'll take good care of you. Thank you.

American Hollow Boring Co.
 Erie, Penna.

A Better Collapsible Tap



THE R-S

Capacity 1" and up

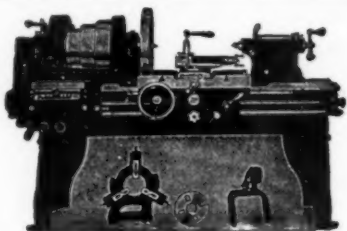
This rugged, serviceable device is the result of long experience in the development, design and manufacture of threading tools. We offer it as a companion tool to the famous R-S (Boehm) Automatic Die-Head.

It has more than made good in every shop in which it has been used.

It is *positive* in action, so that it *will always collapse* at the desired point without dependence upon any kind of spring action. A movement of the knurled ring one full graduation varies diameter of cutting points *one-half of one-thousandth* of an inch, from which it is obvious that adjustments may be made infinitely close.

Better have complete data—the pleasure will be ours, but most of the profit will be yours

Rickert-Shafer Co., 1110 Cherry St., Erie, Pa.



The 18" Heavy Duty Quick Change Gear MUELLER Engine Lathe is a marvel for rigidity, ease of control, and durability. It is the kind of Lathe you need in your shop to meet present day competition.

Let us tell you all about it

The Mueller Machine Tool Company

Radial Drills and Lathes

ESTABLISHED 1902

CINCINNATI, O.

Shapers, Lathes and Millers



Moderate prices with highest grade materials and workmanship.

Stephens Shapers, Millers and Lathes should be your first consideration in equipping your machine shop.



14"x6'—\$400.00

16"x6'— 450.00

With Quick Change Gear Box \$85.00 extra

Send for complete Catalogue

THE JOHN STEPTOE COMPANY

2951 Colerain Ave.,

CINCINNATI, OHIO

The Ney "Positive Grip" Draw-In Collet Chuck

A New Product



Holds hot or cold rolled bar stock, round or hex. Does away with hand wheel and tube, does not reduce spindle capacity of lathe, permits feeding through of bar stock up to 1".

Can be mounted on spindle nose of lathe by means of regular adapter furnished; or mounted on face plate of any lathe by means of adapter plate furnished instead.

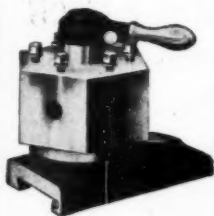
Chuck is applicable to lathes, hand screw machines, universal grinders, milling machines and tool holder for turret lathes.

Chuck is furnished with standard equipment of six collets: $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ " and 1". As each collet will hold work $\frac{1}{32}$ " over or $\frac{1}{32}$ " under size, you practically get 18 collets in the standard equipment of six.

Descriptive circular and price list upon application

The J. M. Ney Company
Hartford, Connecticut, U. S. A.

Help Yourself—



Your Product

can be manufactured cheaper by an F. & S. Turret.

Install one of these attachments on your Lathe and note the increase in production.

FAY & SCOTT, DEXTER, ME.

PRYIBIL



Manufacturers and
dealers of machine
tools, lathes and
wood working
machinery.

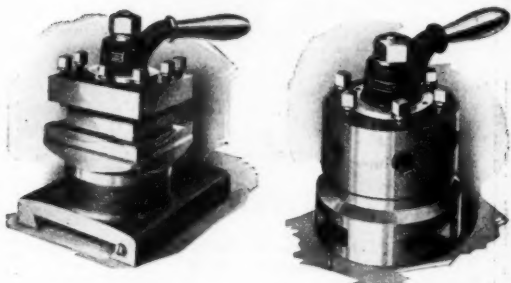
Catalogues and prices on request

ESTABLISHED 1859

**P. PRYIBIL MACHINE CO.
INCORPORATED**

512-524 West 41st Street, New York, N. Y.

Your 'Buying Program Must Include



McCrosky Turrets

Let that new turret lathe wait, but let us show you how McCrosky Turrets can make a turret lathe out of every engine lathe in your shop — at a price that will please you, too.

*McCrosky Turret Bulletin M3 is yours for the asking.
ASK TODAY.*

McCrosky Tool Corporation
Meadville, Pa., U. S. A.

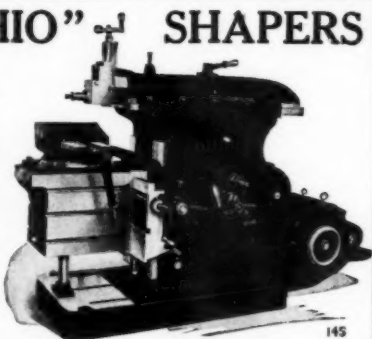
Branches and Agencies in all principal cities
Export Agents: Benjamin Whittaker Inc., 21 State St., New York



"OHIO" SHAPERS

Accuracy
Power
Long Life
Plus
"OHIO"
QUALITY

All the way
through



The Ohio Machine Tool Co.

Established 1887

817 So. Leighton St.,

KENTON, OHIO

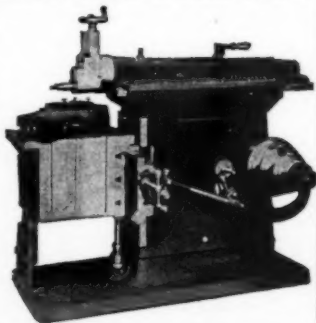
A Complete
Line of

HOLLINGWORTH SHAPERS

Back Geared
Crank Shapers,
12", 14", 16", 20",
24", 28" and 32",
with quick re-
turn of stroke.

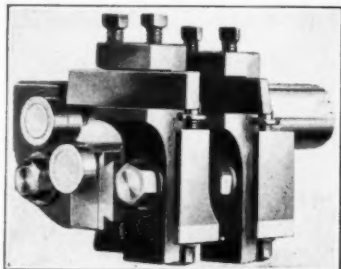
Cone
Pulley,
Single
Pulley or
Motor
Drive.

Well adapted
to internal key-
seating.



Hollingworth Machine Tool Co.

2nd & Greenup Sts., Covington, Ky.



BIGGS—Model C

All Steel Tangent Cut Box Tools

Improved Design, Easy to Adjust

Made to fit all sizes and types of hand and automatic screw machines.

The Tangent Cut gives correct clearance and will maintain accuracy under the heaviest cuts.

Increase your production by using our Models C or D.

They are SUPER-PRODUCTION TOOLS

Send for circular

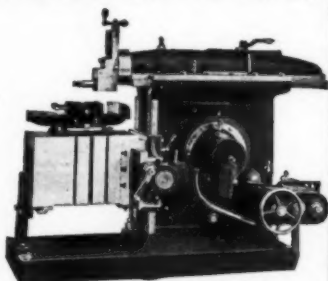
P. H. BIGGS

1235 W. 9th St., CLEVELAND, OHIO

COLUMBIA SHAPERS

Are
not
cheap
machines,
but
they
certainly
are
good
ones.

*Their use
means your
profit*



18", 20", 24", 28", 32"

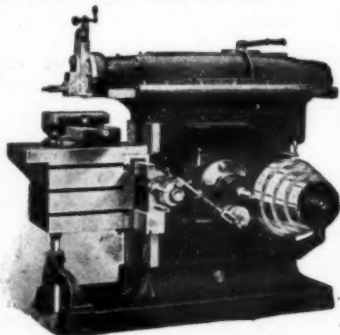
Cone, Single Pulley or Motor Drive

The Columbia Machine Tool Company
Hamilton, Ohio

SHAPERS

12", 14", 16"
Plain Crank,
16", 20", 25"
B. G. Crank,
either Cone
Driven or
through
Speed Box.

28" and 32"
Back Gear-
ed Crank,
Single Pul-
ley Drive.



The Smith & Mills Co. Station B.,
Cincinnati, O., U.S.A.



Consider the Shaping and Slotting
in your Tool Room that come with-
in the dimensions of

The Rhodes Shaper

With its 7" Stroke

Doesn't that really cover almost
everything for which you use a
Shaper?

You will surely want to know about
this result-producing tool, and we
shall be obliged if you will let us
send you our

NEW CATALOGUE H22

The Rhodes Shaper \$195.00

The Rhodes Slotter \$285.00

The Rhodes Mfg. Company

984 Park Road, Hartford, Conn.

SHAPERS — RHODES — SLOTTERS



REDFACE



PULLEYS

**SHEAVES and
FLY WHEELS**

Highest Quality

*Write for
CATALOG*

THE PYOTT FOUNDRY CO.

328 N. Sangamon St., Chicago, Ill.

You Need Less Oil

When using a Curtis Oil Extractor



No. 400—Capacity: 2 Bushels

It helps you to make a better showing on the profit side of the ledger. The price of the machine is returned in a few months; after that the oil saved from chips, shavings and waste is pure gain. The three sizes are easily operated, sturdily built and have ball bearings.

A Curtis reduces oil bills and expense.

Write for details and prices.

Albert B. Curtis Estate

Box 44

--

--

Worcester, Mass.

COOPER UNIVERSAL JOINTS FLEXIBLE COUPLINGS

"YOU CAN'T BREAK THEM OR WEAR THEM OUT"

Smooth; neat; only 5 simple parts; large oil space;
working surfaces case-hardened; no limit to size;
guaranteed stronger than shaft at any angle.

6 PATENTS



Three hundred years ago Hooke invented the Universal Joint with fixed centers. Three hundred years have elapsed and still the Hooke type of universal joints are burning up power and breaking in operation.

The Cooper Patented Universal Joint with no fixed centers is just as frictionless as the crosshead of an engine at any angle. *"You can't break them or wear them out"* with shafts joints are bored for. Perfect lubrication at any speed.

Sizes $\frac{1}{4}$ " to 2" in stock bored to fit YOUR shafts.

Send for one and try it out

Cooper Flexible Transmission Co., Inc.
1723 8th Ave., Brooklyn, N. Y.

Weigel Single-Wheel "Kwality Kaster"

Will not crush or break. Swivels on steel machined rollers. The best single caster on the market.

Double-Wheel "Trukaster"

Lasts three times as long as others. Easiest running, strongest, and most durable double-wheel caster made. Has heavy plates and axes.

Write for Price List

**THE HAMILTON
CASTER & MFG. CO.**
HAMILTON, OHIO



CULLMAN SPROCKETS

STOCK AND TO ORDER



Diamond, Whitney, Baldwin, Duckworth and
Coventry Chains, Block, Roller and
High Speed Silent types on hand



CATALOG

CULLMAN WHEEL CO.,
1359 ALTGELD STREET

CHICAGO

—Your Locker Question

Should Be Settled Right—



May We Help You?

THE IDEAL CALLS FOR:—

Privacy

Cleanliness

Convenience

No Repairs

No Replacements

Less Fire-hazard

Less Floor Space

“Terrell’s” is the Correct Answer!

Terrell Steel Lockers embody all the desirable qualities of the ideal locker. The first cost is the last cost—and you will be enjoying their superb wearing qualities long after the original expenditure has been forgotten. And the first cost may not be as much as you imagine—we shall be glad to make a close estimate.

Writing us incurs no obligation—let’s hear from you

Terrell’s Equipment Company

Hall & Division Sts., Grand Rapids, Mich.

\$50 SAVES THOUSANDS!

Dickow's supremely accurate Index Center often saves thousands of dollars in spoiled work. The \$50 is about the difference in price between a thoroughly dependable "Dickow" and an ordinary index center. A correct machine gives operator more confidence, increasing the output.



Old
Index
Centers
taken
in trade



Over 2000 satisfied users
all over the world.

Stood the severest tests
for over 14 years.

We also sell an Index Center called "Best"

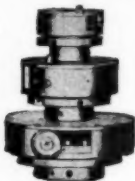
Glad to mail you the descriptions and close prices

FRED. C. DICKOW MACHINERY CO.
2105 W. Lake St., Chicago, Ill.

**MUMMERT-
DIXON**

FACING HEADS

**WITH AUTO-
MATIC FEED**



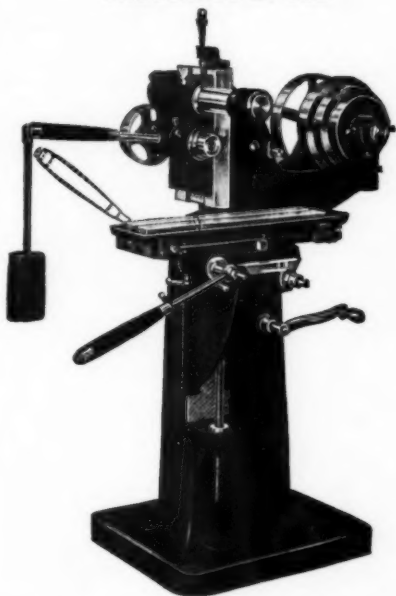
Write for the folder—

—which illustrates a number of operations on horizontal boring mills, milling machines, lathes and drill presses. It also tells how and why the M.-D. Heads are really wonders in saving time and set-ups. Made in 6", 9" and 12" with one-way tool feed, and 9", 12", 16", 20" and 24" with two-way feed. Convenient tool adjustment. Quick feed reverse. But *write for the folder—* it tells the whole story.

MUMMERT-DIXON CO., Hanover, Pa.

"Whitney" Hand Miller

THOUSANDS IN USE



The Milling Machine with the SLIDING HEAD. No other design equals the "Whitney" for high production on interchangeable work. Useful every day in the year on countless operations.

Prompt Deliveries

The Whitney Mfg. Co., - Hartford, Conn.

Chains—Keys—Hand Milling Machines

Burke Bench Millers

**FOR
Accuracy
Convenience
Economy**

On small milling operations, where accuracy as well as production must be had, are the places to use Burke Bench Milling Machines.

Built in various sizes, both hand and power feed, and at prices ranging from \$100 to \$220.



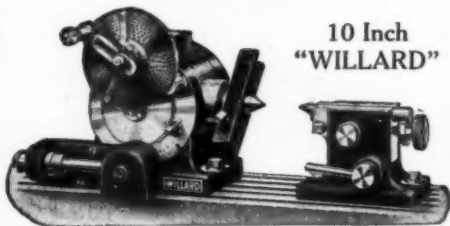
\$220.

BURKE No. 4

**The Burke Machine Tool Co., 287 E. 16th St.
Conneaut, Ohio**

Full Universal Dividing Head

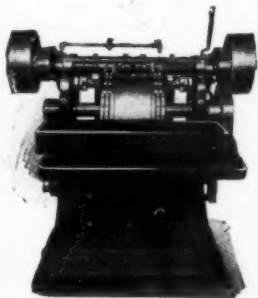
**10 Inch
"WILLARD"**



Right or left hand. Takes care of heaviest cuts on any miller. All parts interchangeable. Swivel head rotates from 10 degrees below horizontal to 10 degrees beyond vertical. Tailstock center clamps securely at any angle. Locking device relieves worm wheel and index pin of cutting strain. Wear between worm and wheel is taken up without disturbing their axial position. Driving mechanism for spiral cutting can be applied. One large index plate takes place of the usual three, giving greater accuracy and more divisions.

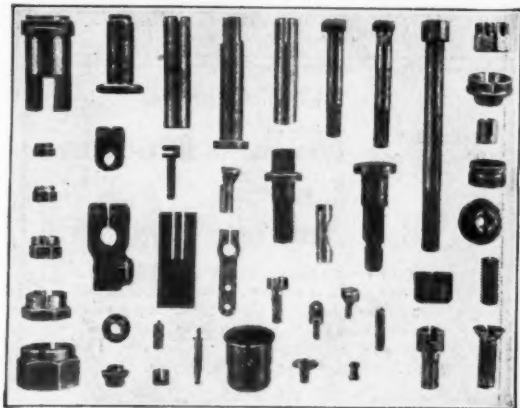
**The Willard - Middletown Machine Co.
Middletown, Ohio**

Continuous Milling



The Craftsman Continuous Rotary Miller mills four rows of work simultaneously. Production costs are slaughtered by this machine. Our repeat orders are our best testimonial. Let us study your milling problems.

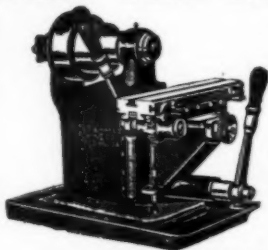
Below are shown some of the parts Craftsman Millers are milling.



Our story is short. Let us tell it to you.

THE CRAFTSMAN TOOL CO.
CONNEAUT, OHIO

Just The Machine



for those light cuts on details for Fire-arms, Sewing Machines, Typewriters, Bicycles, Electrical work, and a thousand and one other details used in the manufacture of the various products of the manufacturing world.

Send for descriptive circular

THE CARTER & HAKES MACHINE CO., West Winsted, Conn., U. S. A.

NEW ENGLAND AGENTS—Hill, Clarke & Co., Boston
NEW YORK AGENTS—Hardinge Sales Co., Grand Central Palace
WESTERN AGENTS—Marshall & Huschart Machinery Co., Chicago, St. Louis, Indianapolis,

No. 1 U. S. Improved Hand and Weight Feed Milling Machine —and— 14" U. S. Sensitive Floor Drill

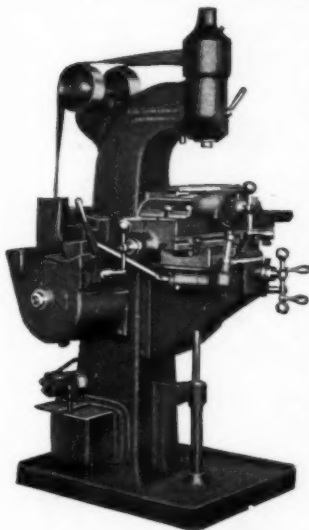
are two moderate-priced tools with which you can do a tremendous amount of work. The Miller has more power than any similar machine of its weight, and is extremely efficient and economical in operation. The Drill is unexcelled on holes $\frac{1}{2}$ " and smaller.

Description and money-saving prices upon request

The United States Machine Tool Co.
Cincinnati, Ohio

The Taylor & Fenn Vertical Milling Machine

With Circular Milling Attachment



The Circular Milling Attachment, when used with our Vertical Milling Machine, affords great possibilities for continuous milling operations, for milling segments of circles, circular slots, and all varieties of circular or longitudinal milling on plain or irregular shaped pieces within its capacity.

The Attachment may be operated by either hand or power feed, and as it is driven from the main table driving shaft of the machine proper, both the power table feed and the power circular feed may be used simultaneously, which is of great advantage in certain classes of work.

SPECIFICATIONS

Working surface of table,.....	10½"
Maximum distance spindle to table,.....	9"
Height,.....	4"
Width of T slots,.....	½"

You'll be interested in complete description; may we send it?

The Taylor & Fenn Company
Hartford, Conn., U. S. A.

PETER BROTHERS'

Abrasive Metal Cutter

Will Save You 5 Hours Every Day

It makes a quick, clean, smooth, straight cut thru hardened steel, brass, copper, aluminum, and any other tough metal. It does not nick or waste metal, nor spoil the temper.

Ball bearing—easy running. Simple to operate, highly efficient, and low in price.

8" Size \$22.50, with C. S.

Splendid for tool room. Cuts high-speed steel up to $\frac{1}{2}$ " square.

12" Size \$60, with C. S.

Cuts up to $2\frac{1}{2}$ " diameter, round or square, at any angle up to 45 degrees. Ball bearing.

15 Days' Free Trial

Write us or ask your dealer


PETER BROTHERS MFG. CO.
115 Railroad St., Algonquin, Ill.



"QUICKWORK"

Registered in U. S. A. and Foreign Countries

Rotary Shears

 **Prices Reduced Sept. 1, 1921**

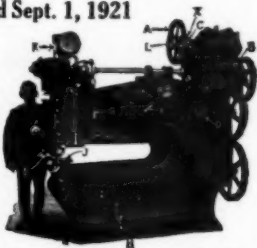
Made in 7 Sizes

Cut all gauges of sheet and plate metal up to 1 inch thick in straight or irregular shapes and openings without cutting in from side of sheet. Leaves square, true edge that requires no finishing. Used in building ships, boilers, tanks, cars & general plate and sheet metal work.

Save 50 to 90%

Eliminates Oxyacetylene cutting and plate planing

Write for catalogue No. 60



Patented June 3, 1913; Aug. 26, 1921.

THE QUICKWORK COMPANY, St. Marys, Ohio, U. S. A.

Cable Address "Quickwork." Codes: W. U., General, Bentley's, Lehier's, ABC 5th Edition

Within the Reach of Every Shop
And Good Enough for the Best



Marvel Draw-Cut Hack Saw No. 2

With Swivel Vise that Swivels Both Ways

Here's an all-around saw of good capacity, that is giving most satisfactory service in shops everywhere, and the price is low. We shall be pleased to quote and to send you complete specifications of this GOOD machine.

Also ask us about our

**Marvel High Speed Saws
Marvel Metal Band Saws, and
Punching, Shearing and Bending Machines**

Write for complete Catalog, showing many good tools.

Armstrong-Blum Mfg. Co.
341 N. Francisco Ave., **Chicago, Ill.**



T. H. Lewthwaite Rugged Punches

Punch More Holes

Because we use a higher grade of tool steel than is usually put into such tools.

Because we harden and temper each punch individually—they are not put thru in batches.

Because our experience of 30 years goes into every Punch.

How about a trial order?

We'll both be pleased

T. H. Lewthwaite Machine Co.
417 East 31st St., (Est. 1890) New York City

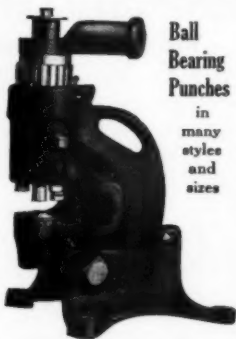
Whitney ^{Ball} Bearing Punch No. 40

Made of 45-50 point O. H. Steel, drop forged. Very rigid—no springing in operation. Now provided with movable handle, to meet user's needs.

Capacity, $\frac{5}{8}$ " thru $\frac{3}{4}$ " iron
Depth of throat, $3\frac{1}{2}$ "
Height of throat, 2"
Weight complete, 87 lbs.

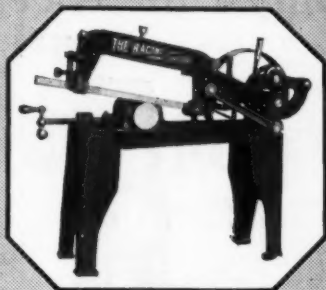
The elimination of friction insures more work at less cost in all Whitney Punches.

Write for Catalog and Price List



Ball
Bearing
Punches
in
many
styles
and
sizes

Whitney Metal Tool Co.
95 Forbes Street, Rockford, Ill.



"RACINE" High Speed Metal Cutting Machines

Standard the World Over

Racine High Speed Metal Cutting Machines give more service, in less time, and at less cost because of the positive mechanical lift that is an exclusive "Racine" feature. The blade does NOT drag on the work on the return stroke. Others claim this accomplishment but the "Racine" actually attains it. Blades keep their edge, cut clean and true, and do not bind or break. Metal cutting production with a "Racine" is continuous.

Check up your metal cutting equipment and write for complete descriptive information of the "Racine" line of high speed metal cutting machines.

Racine Tool & Machine Co.

Catalog H

Racine, Wisconsin, U. S. A.

Use "Racine" H. S. Tungsten Power & Hand Blades.

Mechanical Lift-Positive Draw Cut

The Only Difference

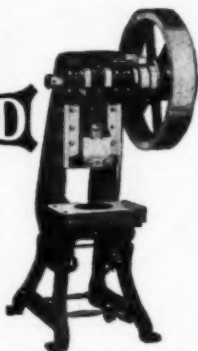
is not just price. The big thing is **service**. An investigation of the merits of

HIGH DUTY **ROCKFORD** PUNCH PRESSES

will give you a new idea of what you should get in punch press service. Definite, dependable reliability under all working conditions.

Write today for complete construction details.

Rockford Iron Works
ROCKFORD, ILL.



THE LITTLE **BLACKSMITH**

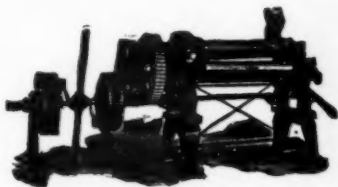
Hand
Power
Angle
Shear
AND
Notch-
ers



WRITE for BOOKLET

**J. F. KIDDER MFG.
COMPANY**

BURLINGTON, VERMONT



BELOIT

INITIAL TYPE

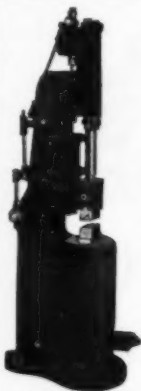
Sheet & Plate Bending Rolls

The Beloit Initial, or side bending, type roll has been designed to meet the demand for a strong, efficient, quick acting roll for use where the heavier Pyramid Type is not required. It is especially adaptable for use in shops handling sheet metal and for the lighter class of work in Boiler Shops, such as stacks, breeching small tanks, and the like.

The upper roll is geared to the adjustable lower roll thus pinching the plate, while the idle roll, which is also adjustable, does the bending. The outer housing is hinged and the upper roll is raised by throwing a cam lever, thus permitting the removal of sheets bent to a full circle. All styles of these rolls are double back geared and require a minimum amount of power.

Built in twenty-six sizes with capacities up to 5/16" and from 14" to 96" between housings.

HENDLEY & WHITEMORE CO.
100 S. State St., **BELOIT, WIS.**



It's Portable

**These two successful tools
should have your immedi-
ate attention!**

The Barr Pneumatic Hammer, Class A—a full automatic high speed tool for all light forging work!

A truly superior tool in construction, adaptability and performance. You find it in the "Topnotch" Plants!

The Barr Pneumatic Drop Hammer, Class D—the last word in a fast, safe tool for all light drop forging, forming, etc.

A Rapid Producer! No Re-Bound! No Friction Boards! No Dropping on Fingers!

PROMPT DELIVERY

Write today for complete information.



Belt Driven

DUPONT Power Hammers

Belt or Motor Drive

**For general forging and
tool dressing.**

**They embody a design and
workmanship that are un-
surpassed.**

Send for Bulletin

United Hammer Co.

45 Bromfield St.,

Boston, Mass

SCREW DRIVING

is an expense which cannot be avoided. But the cost can be *substantially reduced*, while adding mechanical perfectoin to the work.

MAGAZINE FEED

Screw Driving of either wood or machine screws *reduces costs 65%* and upwards, and insures uniform results of the highest quality. Without obligating you in any way, we shall be glad to show you how this modern method would reduce *your* costs, if you will advise us the dimensions over all of your work, with gauge and length of screws you are driving.

THE REYNOLDS MACHINE
COMPANY,
Dept. H. H., Massillon, Ohio

Steel Bearing Balls

**Brass
and
Bronze
Balls**



**Steel
Burnishing
Balls**

Ask for Price List 23-H

The Abbott Ball Company

Elmwood District, Hartford, Conn.

Grant Rotary Rivet Spinner



**Highest Speed
Perfect Finish
Absolute Uniformity
And it's Noiseless**

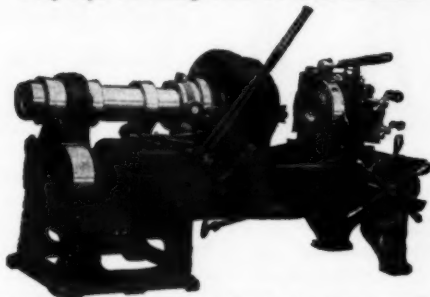
Nowhere else can you find such a wonderful combination of all the good qualities in any one riveting machine. To prove up, send us samples of your work, so we can show you what the "Grant" will do and at the same time give you close estimate of production with low-priced labor. Also Catalog, if you wish, showing the several styles.

Let us hear from you

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

Superior Features of B & Ks

Keep Pipe Threading Costs Down to Bed-Rock



(No. 4 P. D. Q. C. Improved. Belt Drive. Cap. 1" to 4". All Gears are Covered.)

THE ECONOMICAL SERVICE rendered by B. & K. Pipe Machines is easily understood when you know that—

- ☐ They are equipped with a gear box drive for obtaining the right threading speeds.
- ☐ All uncertainty or guess work in selecting the right speed for threading each size of pipe is positively eliminated.
- ☐ Dies can be changed without removing a screw.
- ☐ Die slot can be cleaned without removing the cover.
- ☐ A rotary oil pump supplies oil to dies and cutting-off tool.
- ☐ Pump is gear driven—no belt to soak up oil.
- ☐ All B. & Ks. have the Peerless adjusting mechanism.
- ☐ The larger machines have two gripping chucks.
- ☐ You have 17 styles and sizes to select from.

Let us help you make that money-saving selection now

Bignall & Keeler Machine Works
Edwardsville, Illinois

Sales Agents: Manning, Maxwell & Moore, New York, N. Y.
Chicago Philadelphia Boston St. Louis Pittsburgh Cleveland New Haven
Cincinnati Buffalo Syracuse Detroit Milwaukee San Francisco Seattle

Made in five sizes, for balancing anything that turns on a shaft, up to 10,000 lbs. weight



Anderson Improved Balancing Ways

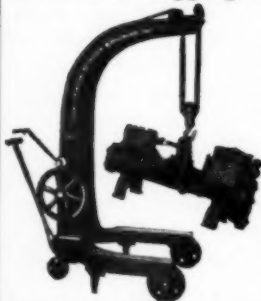
Spindles are hardened, glass hard, so they do not become indented or lose accuracy. Chilled iron discs; especially sensitive bearings.

"Swing"	20"	40"	60"	72"	96"
Greatest distance between standards.....	20"	30"	30"	66"	88"
Capacity in lbs.	1000	2000	2000	5000	10000
Approx. shipping weight.....	45	90	150	350	650
Code	Bend	Bid	Bis	Bib	Ben

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.
1915 Kishwaukee St., Rockford, Ill.

Does the Lugging of 6 to 10 Men



And Expedites Work

Any machine that will enable one man to do the lifting and lugging of 6 to 10 men, saves its cost many times over.

THE CANTON CRANE, HOIST and TRUCK

—does even more than that. By its quick handling of castings and all heavy pieces up to 6,000 lbs., it also *expedites work* and still further reduces costs.

Write for Bulletin E-8

Canton Foundry and Machine Co.
Canton, Ohio

New York Office: 45 West 18th Street, Second Floor

Our Pipe Benders Meet The Demand



Ever since their invention our hand Pipe Benders have had a steady sale and have given universal satisfaction.

Recently, we have made some improved attachments that permit of a wider range of work and open up a new field in the kind of bending the machine will accomplish.

If you do pipe bending you will find our machine an economical, simple and very efficient appliance in reducing costs and doing better work. For 2" and under.

We have a Bulletin waiting for you. Send for it now.

Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

Manufacturers of Cylinder Boring Bars, Portable Millers, Crank
Pin Turning Machines, etc.

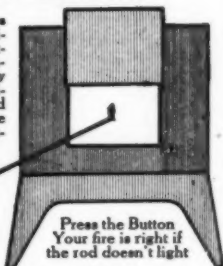
Something New — And Good

The Bennett Detectorod

Shows the presence of excess oxygen in your furnace, the direct cause of scale and far greater losses than most manufacturers realize. Tells instantly whether the atmospheric condition is right. Knowing this and the temperature, you have the two essentials of successful heat-treating under control.



Write for Price



Bennett Metal Treating Co.

Elmwood, Conn., U. S. A.

Also ask us about the Bennett Furnace

FERRO CASE

Is More Efficient than Cyanide

Besides that it is **SAFE**, being non-poisonous. It is rapidly replacing cyanide in thousands of factories. It gives a better, cleaner, glass-hard case. Carbonizes at a lower temperature, saving furnace linings and fuel. Eliminates crystallization, warping and blistering. Does not deteriorate with age. Made in two grades—M for melting furnace, S for sprinkling.

Tri. B. Brand Pack Carbonizer

is a light, fast, long-lived carbonizing agent for use in boxes in a muffle furnace. Gives full value for every dollar spent. A trial order is all we ask.

C. G. BUCHANAN CHEMICAL CO., Cincinnati,
Ohio—Stall.



The Cash Value of Knowing—

what is right in equipment
is oftentimes tremendous—
it puts an end to expensive
experimenting

You can profit by the experience of a number
of eminent engineers who had some big dust
problems to solve, and who found that the

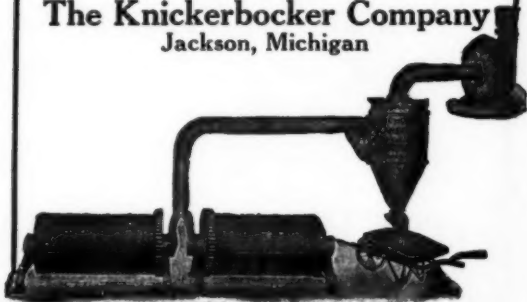
"Rarefied" Dust Collector

did the best work, and was the most eco-
nomical in more than one way.

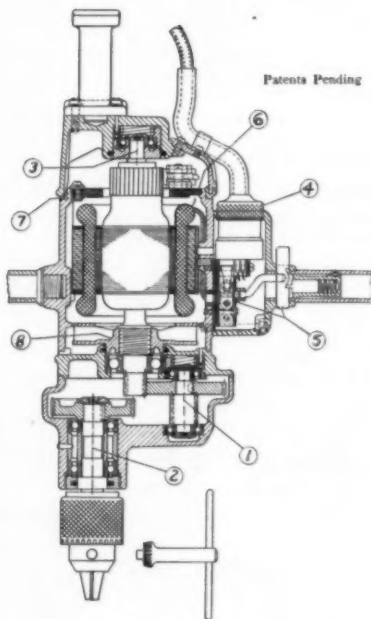
Not only is the "Rarefied" more efficient,
but it saves power. One firm is now doing
with 25 electric h. p. what formerly took 45
h. p. Repairs are reduced to practically nil
because the dust is collected and automati-
cally discharged before the air reaches the
fan, thus saving it from abrasion and wear.

*It's made right, it works right, and the price
is right. Send for our explanatory Booklet*

The Knickerbocker Company
Jackson, Michigan



New Hisey SUPER



Patents Pending

Are mo

POWER
the New Hisey

CURRENT
capacity.

MOTOR
dangerously h
life of machin

MECHAN
into the constr

1. Ball Be

2. Ball Be

3. Ball Be

4. Quick C

5. Famous

Exhaustive
tinue to do m

A close to
drills, has p
is less than o

Exclusive

For max
Drill, and be c

THE HISEY-WOLF MACHINE

AGENTS IN ALL PA

PER Universal Drills

are more efficient from all angles

POWER necessary to do the work. There is an abundance of this in New Hisey Super Drill, and some to spare.

CURRENT CONSUMPTION is lower than any drill of same rated capacity.

MOTOR of our own design, is cool running. Does not operate at exorbitantly high speed (a feature which reduces wear and adds to the life of machine) and is equipped with a practical commutator of liberal size.

MECHANICAL DESIGN determines the life of any machine. Look at the construction of this new Hisey Super Drill.

- | | |
|---------------------------------|--|
| 1. Ball Bearing Gear Spindle | 6. Adjustable brush holder yoke |
| 2. Ball Bearing Chuck Spindle | 7. Improved vent openings, safeguard the motor and interior parts against accidental and willful abuse |
| 3. Ball Bearing Motor Shaft | |
| 4. Quick Cable Connector | 8. Improved ventilating fan |
| 5. Famous Hisey Patented Switch | |

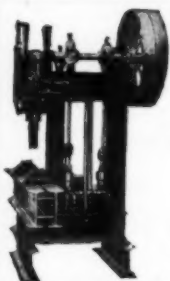
Exhaustive tests have proven that Hisey Drills *will do* and *will continue to do* more work at lower operating cost than any other machine.

A close tabulation by prominent manufacturer using several hundred machines, has proven that the maintenance (cost of up-keep) of HISEY Drills is less than other machines.

Exclusive Hisey features produce these facts.

For maximum production with uninterrupted service, insist on a Hisey Drill, and be convinced.

MACHINE CO., Cincinnati, Ohio
IN ALL PRINCIPAL CITIES



LOURIE

General Purpose Hydraulic Press

This press is, practically, a vertical

Hydraulic Bulldozer

It has an open throat for quick placing of parts.

It can be used for straightening long or short pipes or bars.

It can be used for broaching, punching or forming.

It can be furnished with hydraulic return of ram.

It can be made with a round or square platen under ram end and on base sills.

Write for further information to

Lourie Mfg. Co., Springfield, Ill.

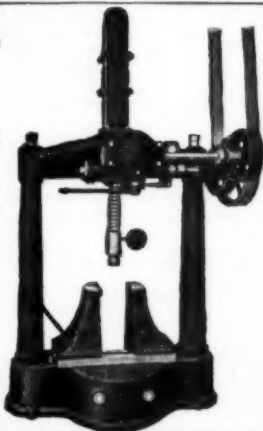
ATLAS

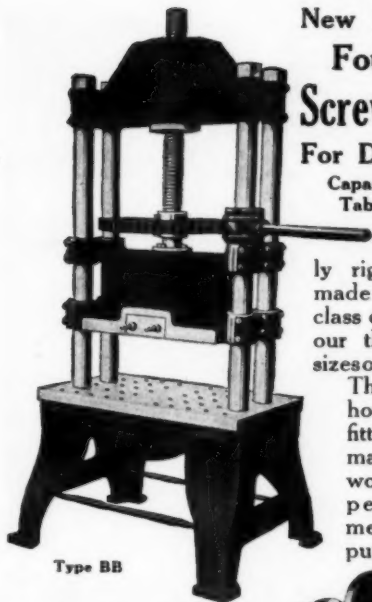
30 Ton Power Press

will give you
greatest possible
efficiency on your
production work.

*ATLAS Presses are built
in all sizes and types.*

Atlas Press Co.
Kalamazoo, Mich., U.S.A.





Type BB

New Manhattan Four-Post Screw Press For Die Makers

Capacity, 80 tons
Table, 20"x36"

This extremely rigid press is made for a heavier class of work than our three smaller sizes of two-posters.

They all save hours of time in fitting dies. One man does the work. Afford perfect alignment between punch and die.

Manhattan Grinder

A revelation in quiet efficiency. Powerful, rigid and accurate. Has non-vibrating wheel. Both feeds have graduated dial.

Particulars and prices?

**MANHATTAN MACHINE
AND TOOL WORKS**

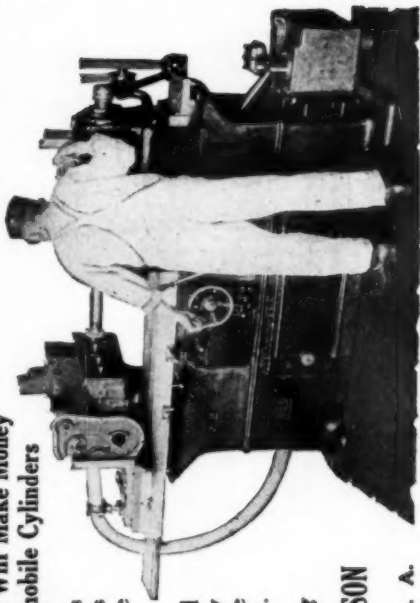
Dept. A
GRAND RAPIDS, MICHIGAN



AUTO REPAIR SHOPS

The Whitney Cylinder Grinder Will Make Money
For You Regrinding Automobile Cylinders

The grinding wheel travels in a true circle and grinds off only enough to make a hole that is round and straight. This machine does the work right and does it quick. That's why you can do a profitable business with a Whitney.



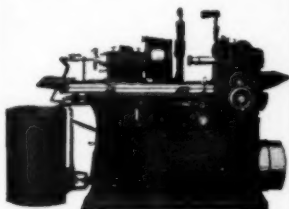
Write for new catalog

BAXTER D. WHITNEY & SON
Incorporated
WINCHENDON, MASS., U. S. A.

"HYDROIL" Internal Grinder

for
Greater Production
**BELL-MOUTH
ELIMINATED**
Accuracy
Finish

This machine has a table speed up to 30 odd feet a minute. On short strokes it will reverse 300 times per minute without shock or hand operation.



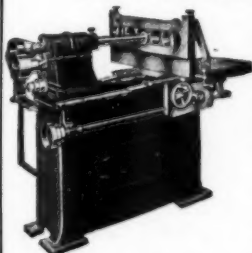
We will be pleased to give you complete details in substantiation of our claims. Write for bulletin G280H.

MACHINE TOOL DIVISION



A Boon to Auto Repair Shops

Grinds Six Ford Blocks a Day



The "SCHMIDT" Internal Grinder

Grinds six Ford Blocks a day, and larger cylinders in proportion, in the hands of the average mechanic.

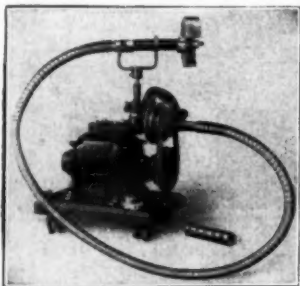
Rugged in construction, simple in operation, and is easily kept in prime running order.

A great money maker for auto and tractor repair shops.

Let us describe this money-making tool and quote close price

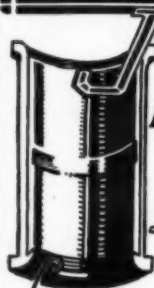
B. L. Schmidt Co., Dept. A 8, Davenport, Ia.

Haskins' Equipments Fit Your Requirements



From Type H-4 to H-7 each machine has a particular place in your industry. Catalog No. 36 tells more about it—a copy will be sent on request.

R. G. Haskins Company
29 So. Desplaines St., Chicago, Ill.



JOHNSON
*Babbit Lined Bearings
And Bronze*
BUSHINGS

for Products Of Super-Quality

JOHNSON BRONZE COMPANY

NEW CASTLE PA.

— BLOUNT —

Ball Bearing



Motor Grinders

Ask your dealer for prices

J. G. BLOUNT CO., Everett, Mass.

Style D.



An Oil Hole or Channel

on a piece of mechanism if not dust proofed or protected is obsolete construction methods. Modern and progressive engineers specify devices that conserve bearings, save lubricant and add to the life of machinery.

Tucker Oil Hole Covers

Opened.

are in a class alone as every style and size is based on utility and efficiency.

Style G.



Opened.

Style A.



Style B.



Style C.



Style D.



Style E.

Style F.
Drive.

Style G.



W. C. & F. C. TUCKER, Hartford, Conn., U.S.A.

FOREIGN AGENTS: *Fenwick Freres & Co., Paris, France*
Alfred Herbert, Ltd., Yokohama, Japan



Style "A"



The Hinge



Style "U"



Style "B"



Style "G"



Style "O"



Style "L"



Style "T"

GITS OIL CUPS

Give perfect satisfaction where others fail. State style and size in which you are interested, and we will send free samples and catalog.

GITS BROS. MFG. CO

1940 SO. KILBOURN AVE., CHICAGO

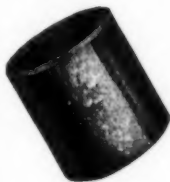


Style "H"

BUNTING



Bunting Bushings and Bearings guarantee absolute satisfaction in service to the builder and user of machine tools.



Bunting carries constantly in stock 150 different sizes of finished bronze bushings. These include practically every bushing the machine builder requires.



Bunting "In Stock" Bushings are priced on a big run basis, and are always ready for immediate delivery. Write for Stock List "W".

The Bunting Brass & Bronze Co.

745 Spencer St., Toledo, Ohio

NEW YORK CITY
Grand Central Palace
Vanderbilt 7300

CHICAGO
722 S. Michigan Ave.
Wabash 9153

CLEVELAND
1362 E. 6th Street
Main 5991

SAN FRANCISCO
198 Second St. Cor. Howard
Douglas 6245

BOSTON
36 Oliver St.
Main 1875





"Wear-Ever" Woodruff Chuck And Keyway Cutter

The "Wear-Ever" Woodruff Keyway Chuck insures a positive drive and true-running cutter. Eliminates making collet chucks. Fits all standard makes of milling machines, and is made in all tapers, such as Brown & Sharpe and Jarno tapers.

Let us supply you with cutters
No extra charge for the square



**SCULLY-JONES & COMPANY, 13th and Robey Streets
CHICAGO, ILLINOIS**

EASY

To Mill

INTERNAL KEYSEATS

With This Tool. You Can't Go Wrong.

*The tool fits in the hole and the
cutter is rotary, making a quick,
neat and accurate method of*

KEYSEATING

Get Catalog O

National Machine Tool Co.

2268 Spring Grove Ave., Cincinnati, O.



“—it surely leads the World”

**That's the verdict of those who
use the Catlin Keyseater**

NO, YOU CAN'T BEAT IT for quick, accurate keyseating at rock-bottom cost. Besides, it is very simple to operate and stands up to the most strenuous demands. It has less than half the parts of other keyseaters.

In ordinary shop practice, without any attempt to establish records, the “Catlin” cut in 20 minutes keyseats $2\frac{1}{2}$ " long, $\frac{1}{4}$ " wide and $\frac{1}{4}$ " deep in 20 mitre gears of 8" diam.; in 3 minutes, a keyseat 6" long, 1" wide and $7/16$ " deep in a cast steel hub. These are merely examples of its productiveness under ordinary shop conditions.

The picture shows the No. 1 Catlin, belt driven, with three-step cone pulley. Our other sizes, for belt or motor drive, cover practically all keyseating requirements.

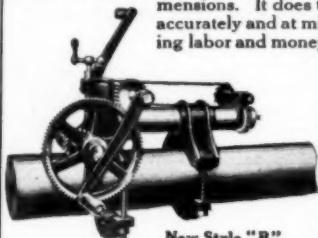
*Always glad to answer
questions. Let us mail
you the descriptive folder*



Chattanooga Machinery Company
Chattanooga, Tenn.

A Strong Portable Key-Way Cutter

This handy little tool is easily taken right to the job where it cuts key-ways of just exactly the right dimensions. It does the work quickly, accurately and at minimum cost, saving labor and money. Just clamp the



New Style "B"

tool to the shaft and turn the crank.

Style "B" has six milling cutters and cuts keyways from $\frac{1}{4}$ " to 2" wide, in shafting 2" to 8" in diam. and 12" long without resetting.

THE BUCHER-SMITH CO.
East Liverpool, Ohio

Nicholson Expanding Mandrels



Save space—A set of nine does the work of several hundred solid mandrels.

Save time—Instantly fit any hole, round or square, from $\frac{1}{2}$ " to 7".

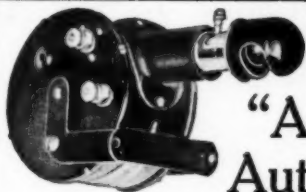
Save labor—No need to caliper or turn down a dozen or so solid mandrels to get one that fits.

Write for literature and 30-day trial plan

Nicholson Arbor Presses

cut in two—the time required for pressing out arbors, punching, bending, broaching, etc. There's a size for you. Description?

W.H. Nicholson & Co.
117 Oregon St., Wilkes-Barre, Pa.



Equip your
car with an

"Autex" Auto Reel

A perfect-working Extension Reel that is readily and easily mounted on any make of Automobile. Can be used on dash, under hood, or other places. Light taken to any part of car. Cord rewinds on Reel automatically.

Price \$6.00 prepaid

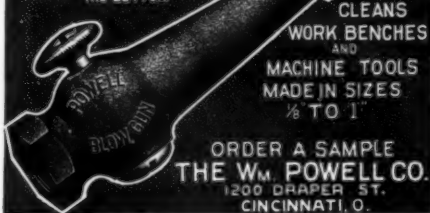
The Cincinnati Specialty Mfg. Co., Inc.

1913-21 Powers St., Cincinnati, Ohio

DO You Use AIR?

THE POWELL AIR GUN VALVE

"JUST PRESS"
THE BUTTON



BUY
POWELL
AIR GUNS
KEEP
CLEAN

CLEANS
WORK BENCHES
AND
MACHINE TOOLS
MADE IN SIZES
1/8 TO 1"

ORDER A SAMPLE
THE W. M. POWELL CO.
1200 DRAPER ST.
CINCINNATI, O.

The Underwood Boring Bar

Standard for Lathe Work—All Sizes

Figure 122



BESIDES doing perfect work, the Underwood Bar enables you to use the *whole power* of the lathe. It is quickly and securely bolted to the face plate, which gives it all the rigidity of the lathe and also centers that end of the bar.

It can be removed and reset as often as required without changing original alignment. Has continuous geared feed, automatic or hand, with two changes.

It pays to have handy our Catalog of Portable Tools describing:—

Millers; circular planer tools; radius planers; rotary planers; machines for truing eccentrics, facing domes, arms for facing cylinder flanges; rotary flue cleaners; pipe benders; locomotive cylinder borers; boring bars for lathe work; crank pin turners; reflex water glass grinders; and special machines built to order.

H. B. Underwood Corporation

1015-25 Hamilton St., Philadelphia, Pa.

Second-Hand Machinery

Lists of Second-Hand Machinery, either for sale or wanted, set in uniform style, will be published under this heading at the rate of **50 cents a line**, across the page, each issue, plus **\$2.50** for name and address. Minimum charge, **\$5.00**. No display permitted in this department.

Write directly to those offering the machines for sale for prices and full descriptions. If what you seek is not listed, use the blank enclosed to make known your wants to the publisher, who will pass them along to all Machine Tool List advertisers.

FOR SALE BY

Lucas & Son, Inc.,

Bridgeport, Conn.

SCREW SLOTTER.

No. 1 Manville automatic screw slotter, brand new, $\frac{1}{2}$ "x1". Price, complete, \$ 375.

FOR SALE BY

H & H Machine Co.,

4274 Easton Ave., St. Louis, Mo.

Grinder, No. 2 Cincinnati, plain.
Planer, Lodge & Davis 24"x24"x6' bed.
Turret lathes, 16"x9' bed Fulton, heavy duty, (2).

FOR SALE BY

Davis & Hemphill,

Elkridge, Maryland

HAND SCREW MACHINE.

One No. 2 B. & S. hand screw machine; very good condition; complete with countershaft; price, \$150.

FOR SALE BY

Botwinik Brothers,

21 Sylvan Ave., New Haven, Conn.

Grinder, Landis No. 4 cylindrical, complete, price.....\$ 1100.
Lathes, Hendey, q. c. geared, yoke head, taper attachment, etc., each..... 500.
Miller, Brown & Sharpe No. 1 universal..... 500.
Planers, Rowland 20"x20"x5', single head, metal working, each..... 200.
Shapers, Stockbridge 16" crank, complete, brand new, each..... 550.

FOR SALE BY

The Sharp Spark Plug Co.,

Wellington, Ohio

Automatics, $\frac{1}{2}$ " multiple spindle Gridley, complete with motor; practically new, (11).
Automatics, $\frac{1}{2}$ " mult. sp. Gridley, without motor; first-class condition, (3).
Automatics, $\frac{1}{2}$ " multiple spindle Acme No. 55; in good condition, (3).
Swaging machine, No. 2 Excelsior; in first-class condition.

FOR SALE BY

Reliance Machinery Sales Company

Brighton Road at Pennsylvania Ave.,

Pittsburgh, Pa.

Air compressor, Ing-Rand. 1750 cu. ft.	Press, 36-P Toledo, geared.
Boring mill, 90" Niles, 2 heads.	Press, No. 59 Toledo.
Drills, upright, 10" to 36".	Punch, E.F. Cleveland, $\frac{1}{2}$ "x1", arch.
Lathes, 8" to 48"—real bargains.	jaw, 12" throat.
Millers, all sizes, plain & universal.	Punch, Beatty, $\frac{1}{2}$ "x1", 42" th. m. d.
Miller, 30"x30"x9' Ingersoll slab.	Shapers, 14", 16", 20", 24", 28" & 32".
Pipe machines, 2", 4", 6", 8" & 12".	Turret lathes, all sizes.
Press, No. 2 Toledo, o. b. i., 2" str.	

Over 200 Machines in stock. What have you for sale?

Inquiries solicited.

SECOND-HAND MACHINERY

FOR SALE BY

Niles-Bement-Pond Company, 111 Broadway, New York

Located at our various factories

LATHES.

- | | |
|---|---|
| 9" x 18" taper, Porter-Cable. | 36" x 20' Pond, 220 volts, d. c. motor. |
| 14" & 16" x 8' Whitcomb, q. c. | 36" x 28' Bement, t. g. |
| 17" x 6' & 8' LeBlond, geared heads. | 42" x 17' Pond, t. g., 220 v., d. c. mtr. |
| 20" x 10' LeBlond, q. c. | 42" x 20' Niles, t. g. |
| 24" x 24' Niles. | 48" x 24' Pond, geared hd., 220 volts, d. c. motor. |
| 26" x 10' Pond, 220 volt, d. c. motor. | 48" x 30' Niles, t. g. |
| 28" x 12' Pond. | 50" x 17' Miles, old style. |
| 28" x 18' Niles, taper. | 54" x 28' American, t. g., 220 volt, d. c. motor. |
| 32" x 17' Pond, t. g. | 63" x 40' Bement, t. g. |
| 36" x 13' Pond, t. g., 220 v., d. c. mtr. | |
| 36" x 17' Pond, taper, 220 v., d. c. mtr. | |

TURRET LATHES.

- | | |
|---------------------------------------|--|
| 1", 2", 2 1/2" and 3" P. & W. | No. 6-A P. & J., 220 volts, d. c. motor. |
| 1 1/2" Southworth pl. hd. screw mche. | 21" and 28" Pond rigid turrets. |
| 2" x 24" W. & S. hollow hex. | 21", 28", & 34" Gisholts. |
| 2" x 24" Jones & L., cone hd., old. | 32" Conradson-American turret. |

PLANERS AND SHAPERS.

- | | |
|--|---|
| 20" G. & E. shaper. | 42" x 42" x 26" Pond, reversing motor. |
| 20" Stockbridge shaper. | 48" x 48" x 16" Pond, reversing motor. |
| 20" x 20" x 6' Bement. | 48" x 48" x 20' Bement, belt. |
| 24" x 24" x 6' Powell. | 54" x 36" x 10' Bement, belt. |
| 24" x 24" x 6', 8' and 10' Whitcomb-B. | 50" x 36" x 22" Pond, reversing motor. |
| 26" x 36" x 6' Gray. | 54" x 54" x 12" to 22" Pond, rev motors. |
| 30" x 30" x 6' & 10' Pond, 2 heads. | 60" x 60" x 14" to 24' Niles, belt. |
| 30" x 30" x 6' to 12' Pond, reversing motors. | 72" x 72" x 12' Bement, belt. |
| 36" x 36" x 10' to 16' Niles. | 72" x 60" x 14' Bement, reversing mtr. |
| 36" x 36" x 12" to 16' Pond, reversing motors. | 72" x 72" x 20' Ridgway, forge, reversing motor. |
| 36" x 36" x 24' Bement. | 76" x 76" x 26" Pond, reversing motor. |
| 42" x 42" x 14' Bement. | 10' x 10' x 36' Betts, 220 volt, d. c. motor through belts. |

MILLERS AND GEAR CUTTERS.

- | | |
|--|--|
| No. 2-A Brown & Sharpe universal. | 15" Gleason bevel gear generator. |
| No. 2-B single pulley pl., B. & S. | No. 5 vertical, cone pulley, B. & S. |
| No. 4 plain, cone pulley, LeBlond. | 16" Cincinnati gear hobber (new). |
| No. 4 plain, cone pulley, B. & S. | 36" to 60" B. & S. spur gear cutters. |
| No. 5 plain, cone pulley, B. & S. | No. 3-36" Newark, 220 v., d. c. mtr. |
| 6 x 48 to 132" P. & W. old style thread millers. | No. 4-48" Newark, 220 v., d. c. mtr. |
| 14" No. 5-A Lees-Bradner gear generator. | No. 55-36" Newark heavy pinion, 220 volt, d. c. motor. |

DRILLING MACHINES.

- | | |
|-------------------------------------|-------------------------------------|
| 1-spindle Pierle, b. b. | 5' Ridgway, 220 volt, d. c. motor. |
| 32" Aurora, tapping attachment. | 6' Pond, 220 volt, d. c. motor. |
| 40" Aurora, tapping attachment. | 6' Niles full universal, speed box. |
| 4' Bickford speed box radial. | 12-spindle No. 13 P. & W. multiple. |
| 5' Niles full universal, speed box. | |

GRINDERS.

- | | |
|--|---------------------------------------|
| Mummert-Dixon port. radial grinder, 220 volt, d. c. motor. | 12" x 36" Cincinnati, plain. |
| 13" Gorton disc grinder. | No. 11 B. & S. internal. |
| 8" x 20" Fraser universal. | P. & W. old style vertical. |
| No. 3 B. & S. universal. | 18x6 Reid surface No. 2. |
| | P. & W. thread miller cutter grinder. |

BORING MACHINES.

- | | |
|-------------------------------------|--|
| 36"—44" Niles side head mill. | 10"—16" Niles 220 volt, d. c. motor. |
| 51" Niles mill, with turret head. | 2 1/2" and 3" Lucas horizontal. |
| 60" Bement b. & t. mill. | 4 1/2", 5 and 6 1/2" Niles floor borers. |
| 72" Ridgway, 220 volt, d. c. motor. | 2 1/2" to 4 1/2" horizontal boring and drill-
ing machines. |
| 10' Niles, 220 volt, d. c. motor. | |

SECOND-HAND MACHINERY

Niles-Bement-Pond Co.,—Continued

MISCELLANEOUS.

Air compressors, 324' and 835', steam drive.
Blow fans, No. 10 Sturtevant and No. 70 Buffalo.
Crane, 3-ton, 19' span, Niles 3-motor, 220 volt, d. c.
Crane, 20-ton, 48' span, Sellers, 220 volt, d. c.
Engines, 125, 150 and 200 h. p. Philadelphia Corliss.
Generator set, 100 k. w., 22 volt, d. c., direct connected to engine.
Hammer, 800 lbs. Bement, bd. drop.

Hammer, 80 lbs. Bradley, cushion helve.
Heater, 600 h.p. Cochrane, fd. water.
Hot blast apparatus, 72" fan, steam engine drive.
Pumps, 200 to 500 gal., steam drive.
Saw, 6x6 Racine, 220 volt, d. c.
Saw, No. 16 Higley, 8" capacity.
Saw, 5" Nutter-Barnes.
Saw, 7" capacity, Espen-Lucas.
Slotter, 6" Bement.
Slotter, 18" Putnam, 220 volt, d. c. motor.

FOR SALE BY

J. C. Marr Machinery Co.,

Air compressor, 5x6" Knowles \$ 40.
Bender, No. 4 Pexto, 24 gauge. 20.
Bender, No. 9 gutter, Pexto, 30" 10.
Blower, No. X Garden City, 90 cu. ft. 60.
Blower, No. 1/2 Garden City, 210 cu. ft. 100.
Blower, No. 1/2 Garden City, 440 cu. ft. 165.
Bolt cutter, 1 1/2" Acme, with dies 350.
Boring mill, 36" Bridgeport, 2 hds. 700.
Boring mill, 36" Bullard, 1 hd. 850.
Boring mill, 44" D. & H., 2 hds. 1200.
Boring mill, 6" Bickford, 2 hds. 1200.
Drill, 21" Champion post, new 50.
Drill, 4" Bickford, gear box. 800.
Folder, No. 58A Pexto, 42", new 100.

127 Water St., Pittsburgh, Pa.

Groover, 36" power driven, new \$ 295.
Lathe, 11x4' Prentiss, speed 50.
Lathe, 13x5' American, speed. 60.
Lathe, 14x6' L. & S., q. c. g. 250.
Lathe, 16x10' L. & S., q. c. g., t. a. 375.
Lathe, 16x6' Flather, c. r., t. a. 250.
Lathe, 18x8' Bradford, c. r. 350.
Lathe, 23x12' Draper, c. r. 450.
Lathe, No. 3 Bardons turret. 275.
Miller, No. 1 Burke hand, vise 100.
Miller, No. 3 Brown & S. pl. 400.
Pipe mch., 12" Cox, with dies. 1250.
Press, No. 2 1/2 Ferracute, o. b. i., 1 1/2" 135.
Shear, Niagara 7 squar' g. 18 ga. 335.
Shear, Niagara scrap, 6x1/16" 110.
Trolleys, 1, 1 1/2-ton, for 6" & 8" beam.

FOR SALE BY

E. L. Esley Machinery Co., 551-557 Washington Blvd., Chicago, Ill.

Balancing mche., Norton, crk. shaft, 1/2 h. p. 110 volt motor and rheostat.
Cutting-off mche., 4" Hurlbut & R. Drill, rail, No. 7-D Moline "Hole Hog".
Drill, rail, No. 17-D Moline "Hole Hog".
Drills, 1-sp., 3-sp., 4-sp. Allen, h. s., b. b.
Drills, radial, Alfred box.
Gear miller, 1 1/2 Bilton auto, cap. 18-p.
Gear hobber, No. 1 Adams-Farwell, latest type.
Grinder, No. 3 B. & S. plain.
Grinder, cyl. plain, Landis No. 11 8"x32".
Grinder, dbl. disc, No. 8 Besly.
Hammer, 800 lb. Massillon st. drop.
Jointer, 26" Williamsport.
Lathes, 9" to 33" swing, 4' to 16' bed.
Miller, No. 2-M Potter & Johnston automatic.
Miller, No. 33 planer type, Becker-B.
Planer, 24"x24"x 6' Hamilton, 1 rail head.

Planer, 36"x36"x16' Ohio, 1 rail hd., 1 side head.
Planer, 36"x36"x14' Rockford, 2 rail heads, 2 side heads.
Planer, 36"x36"x12' Woodward & Powell, 2 rail heads.
Planer, 42"x42"x10' Gray, 1 head on cross rail.
Planer, 52"x56"x26' Gray, 2 heads on cross rail.
Punch, 24" thrt. Clev. "EF", s. e., 440 v., a. c. motor attached; also one with 36" throat and one with 40" throat.
Riveting mche., Prouty, pneumatic.
Screw-driving mch., No. 1 Reynolds, rd. & flat hd. wood or mch. screws up to No. 12.
Shear, rotary, Quickwork, 3/16" cap., with 440 volt motor attached.
Slotter, 26" Niles.
Turret, former, No. 00 B. & S. auto., for work not tapped.
Woodworker, No. 51 Crescent univ.

SECOND-HAND MACHINERY

FOR SALE BY

Brownell Machinery Co.,

Boring mill, No. 1 Cleveland horiz.
Boring mill, 54" Bullard vertical.
Boring mill, 42" Bullard vertical.
Drill, 4-spindle Reed-Prentice.
Drill, 26" Henry & W. sens. radial.
Drill, 6" American plain radial.
Grinder, No. 2 B. & S. universal.
Hammer, 40 lb. Bradley cush. helve.
Hammer, 50 lb. Bradley upright.
Milling mche., No. 6 Whitney hd.
Milling mche., No. 1-B Milwaukee,
vert., univ., slotting, rack cutting
attachments, rotary table.
Planer, 17"x17"x4' Whitcomb.

11-13 Eddy St., Providence, R. I.

Planer, 30"x30"x8' Whitcomb.
Planer, 36"x36"x13' Betts, 4 heads.
Press, power, No. 7-S Standard Inc.
Press, No. 9 Manville knuckle joint.
Press, No. 1 Standard broaching &
drawing 7".
Press, 50 lbs. Standard plain drop.
Screw machines, No. 00, OG and
No. 2 B. & S. automatics.
Screw mche., No. 4 D. & W., g. f. h.
Swaging machine, No. 2 Standard.
Swaging machine, No. 3 Langelier.
Wire bull block, No. 11 Standard.

FOR SALE BY

A. D. White Machinery Co., - 108-114 N. Jefferson St., Chicago

ENGINE LATHES.

14"x 6' Smurr & Kamen.
18"x 7' Chard, d. b. g., p. c.
18"x 9' Bell, d. b. g., p. c.
20"x 8' Hamilton, d. b. g., s. q. c.
20"x 8' Lodge & Shipley, grd. hd.
20"x 8' Reed, s. b. g., p. c.
20"x 8' Reed, motor driven.
22"x10' Davis, d. b. g., q. c.
32"x10' Pond, s. b. g., p. c.
34"x10' Putnam, s. p. g., p. c.
38"x14' Fifield, s. b. g., p. c.

MILLING MACHINES.

No. 6 Rockford, plain.
No. 25 Becker, horizontal.

DRILL PRESSES.

20" Mechanics, friction.
26" Barnes, sliding head.
28" Barnes, sliding head.
38" Aurora, sliding head.
2 spindle Guarantee, h.s., b. b.
4 spindle Reed sensitive, 1/2" cap.
24" No. 24 Foote-Burt heavy duty.
2 spindle 24" Barnes, all grd. gang.

PUNCH PRESSES.

No. 4 Rockford, o. b. i. (3).
No. 8 & No. 11 Bliss auto. button
presses.
New Swaine o. b. i. presses Nos. 27,
29, 31, 33, 35 and 37.

TURRET LATHES AND SCREW MACHINES.

No. 3 Foster, plain head.
20"x5' Bridgeport, (3).
20"x8' Fay & Scott universal.
22"x5' Reed.
21" and 24" Gisholts.
3x36" Jones & Lamson.
10"x10" Milholland.
10" Biggs (3).
No. 1 Garvin, hand, (4).
No. 1 B. & S. auto. 1/2" (2).
No. 3 Stecher, hand, (4).
16"x5' Drees Fox.
18"x6' American Fox.
18"x6' Springfield Fox.
7/16" Cleveland, ratchet feed.
1" Cleveland, semi-auto.
1" Cleveland, friction.
1" Cleveland, jigger.
1" Hartford, (2).
1" Cleveland, jigger.

BOLT CUTTERS AND PIPE MACHINES.

14" Acme, double head.
5 1/2" Acme single head, (2).
4" Acme single head.
4" Saunders (2).
8" Eaton, Cole & Burnham.

MISCELLANEOUS.

Blower, No. 7 Sturtevant, high press.
Boring mch., 24" bar, Binsse horiz.
Gang slitter, takes 21" sheets.
Gang slitter, takes 29 1/2" sheet.
Gas engine, 35 h. p. Columbus.
Grinders, No. 2 Woods tool & cutter.
Grinder, No. 2 Oesterlein tool & cut.
Grinder, 12x32 Landis plain.
Grinder, Springfield, 2-wheel wet.
Grinder, Leland & F., wet.
Keyseater, No. 2 Mitts & Merrill.
Planer, 30"x30"x10' Pond, 1 head.
Profiler, 2 spindle Putnam.
Riveter, 1/2" Shuster.
Saw, No. 5 1/2 Nutter-Barnes.
Screw slotter, Garvin hor. 3/16 to 1/4".
Tapper, No. 2 Garvin, auto.

SECOND-HAND MACHINERY

FOR SALE BY

Austin Machinery Corp'n, 609 Railway Exchange Bldg., Chicago
AIR COMPRESSOR.

Ingersoll-Rand Imperial type 10xB2, 1180 cu. ft. per minute. Belt-driven by 200 h. p. motor.

BORING MILLS.

Rochester horizontal floor type, with 11'x6' bed, 3½" spindle.

No. 2 Pedrick column type, with floor plate and outer support.

Rochester horizontal. 3" bar, table type, all power feed.

60" Niles vertical, 2 swivel heads, friction feed, 5 step cone, 5" belt.

42" Bullard rapid production, 1 swivel and 1 turret head.

BULLDOZER.

No. 5 Blakeslee worm dr., 20" str. Face of cross hd. 65"x14". Die space 39".

DRILL PRESSES.

15" Barnes floor type, hd. fd., 5 speeds.

16" Sibley floor type, hd. fd., 5 speeds.

No. 1 Knight drilling & mill'g mch.

25" Weigel, with round tables, (2).

25" Weigel, with comp. tables, (2).

Baker, 2½" capacity.

GRINDERS.

No. 1 LaSalle surface.

No. 2 Wilmarth & Morman surface, with magnetic chuck.

No. 12 Brown & Sharpe; live head operated by flexible shaft.

13x43 Modern universal No. 3, over-head countershaft.

No. 2 Ohio, all hand feeds.

12x24 Modern plain, self-contained countershaft.

Springfield variety, 24" ring wheel; hand feeds.

Walker universal, with internal spindle.

LATHES.

14"x6" Carroll-Jamieson. 4-step cone, 2" belt, q. c. g., taper, relieving and draw-in attach., 10" 4-jaw chuck.

20"x10" Davis, 4-step cone, 4" belt, q. c. g., double back gear.

48"x22" Bridgeford, latest type grd. head; arranged for grd. motor dr.; same as new; 4 face plate jaws.

24"x12" Walcott.

30"x12" N. B. P.

42" Niles roll turning, with 3 carriages for turning printing, paper mill and other rolls.

48"x16" New Haven internal face plate drive. 5-step cone, 4" belt, 8" raising block fitted.

48"x20" Sellers external face plate drive, 5-step cone, 5" belt.

MILLING MACHINES.

No. 5 Becker vertical.

No. 5C Becker vertical.

No. 6 Becker vertical.

Model C Becker vertical.

No. 3 Owen universal.

No. 14 Garvin knee type.

No. 14 Garvin vert., planer type, (2).

No. 11 B. & S. plain.

No. 3 Kempsmith plain.

No. 3-H LeBlond high duty, (5).

No. 4 LeBlond high duty, (5).

Duplex Newton, with planer type table operated by screw.

Pratt & Whitney automatic.

6"x14" Pratt & Whitney thread miller.

MEASURING MACHINE.

6"x90" Pratt & Whitney measuring machine.

PRESSES.

No. 4 Industrial, upright, dbl. side, 18" and 24" throats, 6" stroke.

Arranged for geared motor drive.

857 & 856 Toledo rack & pinion, (3).

604 Bliss rack & pinion, (3).

1154 Toledo wiring, 28" stroke, (2).

D45 Ferracute horiz. bulldozer. 48" stroke, capacity 10" stock, (3).

No. 5 Bliss Stiles, 6" belt, flywheel type.

PLANER.

36"x36"x18' Cincinnati, 2 heads on rail, arranged for motor drive.

RADIAL DRILL.

Cleveland wall radial, 15' arm, wheel & lever feed, 6' vertical adjustment.

SLOTTERS.

18" Drill, arranged for motor drive, table 34".

36" Niles, circular table 50", cross feed 30", longitudinal feed 50".

SHEARS.

No. 134 Marshalltown rotary, with 6' 3" throat, arranged for motor drive.

MISCELLANEOUS.

Crane motors, new Standard, and accessories, (40).

Furnace, Quigley, 9' 8"x31' 5"x9' 10", complete with 9 oil burners and electric pyrometers.

SECOND-HAND MACHINERY

FOR SALE BY

Frank Toomey, Inc.,

127-131 N. Third St., Philadelphia, Pa.

Machine Tools.

LATHES.

- | | |
|---|---|
| 42" Pond car wheel, motor dr., used. | 16"x8' Sidney, d. b. g., q. c., new. |
| 36"x16' Sidney, d. b. g., q. c., new. | 14"x6' Carroll, q. c., new. |
| 21"x10' LeBlond, d. b. g., q. c., used. | 13"x 5' 6" Carroll, s. b. g., p. c., new. |
| 17" & 15" Sidney, d. b. g., q. c., new. | 9"x36" Johnson, bench, new. |

SHAPERS AND PLANERS.

- | | |
|--|--|
| 7" Rhodes shaper, new. | 36"x36"x10' Cincinnati planer, 3 heads, motor, used. |
| 16", 20", 24" Steptoe shapers, new. | 30"x30"x8' Whitcomb, 1 hd., used. |
| 20" Cincinnati b. g., used shaper. | 24"x24"x8' Hendey planer, 1 head. |
| 36"x36"x14' Ohio planer, 4 heads, belt driven, used. | 24"x24"x6' Pease planer, 1 head. |

MILLERS.

- | | |
|-----------------------------------|-----------------------------------|
| No. 12 Brown & S. profiler, used. | No. 2 Brown & Sharpe vert., used. |
| No. 4 Brown & Sharpe plain, used. | No. 1 Dow plain, new. |

DRILLING MACHINES.

- | | |
|---|-------------------------------------|
| 36" Hamilton pl. rad. cone dr., used. | 23" Rockford, sl. hd., b. g., used. |
| 36" Aurora, b. g., p. f., used. | 26" Rockford, sl. hd., b. g., used. |
| 28" Superior, s. h., b. g., p. f., new. | 20" Excelsior and Champion, b. g. |
| 32" Superior, b. g., p. f., new. | 4 spdl. Superior hi-speed, used. |

MISCELLANEOUS.

- | | |
|--|---------------------------------------|
| Automatics, Acme No 52 mult., used. | Pipe machines, 2", 4", 6" Oster, new. |
| Bolt cutters, Landis 4", used. | Presses, large stock, used. |
| Boring mill, 42" Bullard, vert., used. | Punch & s. Buffalo "Iron Worker". |
| Grinder, 10"x36" Norton, pl., used. | Slotter, 10"-12" Dill, used. |
| Grinder, 8x30" Modern plain, used. | Turret, Gisholt 21" |
| Grinder, No 1 Fraser univ., new. | Turret, J. & L. 3"x36", chucking. |
| Keyseaters, Nos. 2 & 4 Catlin, used. | Turret, Gridley 4-spindle, 2 1/2". |

FOR SALE BY

Jones Machine Tool Co.,

435 E. Pearl St., Cincinnati, Ohio

ENGINE LATHES.

- | | |
|-----------------------------|---------------------------|
| 14"x 6' Bradford, q. c. | 24"x12' LeBlond, q. c. |
| 16"x 8' Bradford, q. c. | 24"x16' Prentice, l. c. |
| 17"x 8' Sidney, q. c. | 24"x16' Star, l. c. |
| 18"x 8' Walcott, q. c. | 32"x12' Boye-Emmes, q. c. |
| 20"x 8' Boye & Emmes, q. c. | 36"x24' American, q. c. |
| 24"x10' American, q. c. | |

DRILL PRESSES.

- | | |
|----------------------------------|------------------------------------|
| 22" Prentice, p. f. | 24" Prentice, s. h., taper attach. |
| 24" Aurora, b. g., s. h. | 24" Weigel, all gear drive. |
| 24" Aurora, s. h., taper attach. | 28" Superior, s. h., b. g. |

SHAPERS.

- | | |
|--------------------------|-----------------------------|
| 14" Steptoe crank. | 18" Barker crank. |
| 15" Juengst crank. | 20" Steptoe crank. |
| 16" Smith & Mills crank. | 24" Cincinnati b. g. crank. |

MILLING MACHINES.

- | | |
|-----------------------------------|--------------------------------------|
| No. 1 Toledo hand miller. | No. 3 Milwaukee, plain, s. p. drive. |
| No. 1 1/2 B. & S. universal. | No. 4 Cincinnati, plain. |
| No. 3 B. & S. plain, s. p. drive. | No. 1 1/2 Knight vertical miller. |

MISCELLANEOUS.

- | | |
|---|---------------------------------------|
| Automatics, Cleveland, 2 1/2" cap. | Press, rack & pinion, No. 857 Toledo. |
| Bolt cutter, 1 1/2" National single hd. | Presses, P-2 & P-3 Ferracute, No. 5 |
| Gear cutters, 26" & 36" B. & S. | Toledo, No. 74 1/2 Bliss. |
| Gear hobbors, 12" Barber-Colman. | Punch, No. 6 Beatty, 45" throat. |
| Grinder, No. 60 Heald. | Square shear, 97" Toledo, 10 gauge. |
| Grinder, 14"x72" Norton. | Square shear, 96" foot power, 20 ga. |
| Hammers, board drop, 800 to 2000 lb. | Turret lathes. |
| Planers, 24", 36" & 48". | |

Let us know your wants. We can supply you.

SECOND-HAND MACHINERY

FOR SALE BY

Russell Machine Co.,

28th St. & A. V. R. R., Pittsburgh, Pa.

LATHES.

60"x26" Gleason, triple geared.
48"x32" N. B. F., triple geared.
48"x28" Niles, c. r.
48"x26" Pond, triple geared.
26"x12" Pittsburgh, dbl. b. g.
26"x20" 6" Putnam, b. g., c. r.
28"x10" 6" Walcott, q. c. g.
24"x18" 6" Johnson lathe.
24"x11" Reed, c. r.
19"x10" LeBlond, motor drive.
19"x 6" Bullard, c. r., b. g.
18"x 8" Sidney, q. c. g., d. b. g.

16"x 6" Blaisdell, h. s.
16"x 6" Fosdick, q. c. g.
16"x 6" Columbus, q. c. g., new.
15"x 8" Schellenbach, d. b. g., h. s.
14"x 6" Lodge-Shipley, q. c. g.
11"x 8" Barnes, h. s.
3"x36" J. & L. turret.
24"x 6" Gisholt turret, 64" h. s.
24"x 6" Gisholt tur., 64" h.s., m.d.
10"x 4" Blount speed lathe.
14"x 5" American speed lathe.
18"x7 1/2" Wood lathe.

PLANERS AND SHAPERS.

24"x24"x8 Chandler planer, 1 head.
45"x48"x22" Pond planer, 4 heads.
72"x56"x12" Betts planer, 2 heads.

14" G. & E. sgl. grd. shaper.
16" G. & E. single geared shaper.
20" Stockbridge, b. g. shaper.

DRILLS AND BORING MILLS.

20" Barnes "camel back".
20" Champion, new, pl. w. & l.
20" Silver, new, b. g., p. f.
30" Gould-Eberhardt, b. g., upright.
30" Prentice and 36" Snyder, b. g.
40" New Haven, b. g. drill.
3", 4" & 7" Prentice radial drills.
6", 6 1/2" & 8" Pond radial drills.
3" Fosdick, 9" Baush radial drills.
Burke Nos. 0 & 1 sensitive drills.

Champion post drills, 1/2" & 1".
30" Bullard and W. & S. bor. mills.
36" Bridgeport boring mill.
42" Bullard rapid production.
42" & 50" Bullard bor. m., 2 heads.
62" Colburn boring mill.
90" Niles boring mill, 2 heads.
7" & 10/16" Betts, 2 heads.
10" Pond boring mill, 2 heads.
10" Niles boring mill, 2 heads.

PUNCHES, SHEARS,

PRESSES AND ROLLS.

L. & A. size C. multiple punch.
50" throat Reade sgl. end punch and shear; massive construction.
Cleveland punch & shear, 19" throat.
No. 6 L. & A., 24" throat.
No. 45 Buffalo punch, 14 1/2".
No. 4 Doeiger & Kirsten alligator shear, cap. 4 1/2" round soft steel.
Garrison m. d. alligator shear, 15" knife, cap. 3" square, 36000 lbs.
Niagara plate shear, 97"x3 1/2".
Morgan plate shear, 96"x1" thick.
Garrison plate shear, cap. 3"x81" m.d.
Waterbury-Farrel rotary sh., 14" thr.

Mesta plate shear, cap. 4"x156".
Carlin alligator shears, 2 1/2" cap.
Lewis alligator shears, 2 1/2".
Niagara pr. sq. shears, 36"-72"-96".
Stoll 53" sq. shear.
500 ton steam hydraulic press.
300 ton horiz. hyd. wheel press.
No. 56 dbl. housing knuckle press.
Stiles No. 3 inclinable press.
Bliss No. 19 o b i. press.
Bliss No. 78 1/2 s. s., d. g. press, 8" str.
Corry Mch. Co. press, 12" stroke.
Straight-side punch press, 1 1/2" str.
Ferracute foot presses, 2" stroke.

MISCELLANEOUS.

Air compressor, No. 0 Au-To 3"x4".
Air compressor, 6"x8" hor., b. d.
Air compressor, 8"x8" hor. b. d.
Air compressors, Bury 10x10.
Band saw, Kane-Roach 30".
Blower, Sturtevant, No. 4, volume.
Blowers, Buffalo No. 7-8 vol.
Blowers, Sturtevant No. 8.
Blowers, Root Nos. 5 & 6 rotary.
Bolt cutter, Landis 1 1/2".
Brazing table, all iron, 17"x29 1/2"x31".
Bulldozers, Nos. 4 & 6 Williams-W.
Cold saw, Wagner, size 18 type 3.
Corner treader, American No. 65.
Crane, 10" I-beam, 12'3" span.
Cranes, portable 2 & 2 1/2 ton.
Engine, gas, 18 h. p. Feuner.
Forge, No. 41 Champion new.
Grinder, Greenfield cutter & tool.
Grinder, Diamond No. 3 wet tool.

Grinders, Plymouth Nos. 13, 14, 17.
Hammers: 1500 lb. Bement steam drop; 2500 lb. Chambersburg dbl. leg; 2000 lb. B.M. sgl. leg steam forg.
Hammers, 80 & 100 lb. Bradley.
Hammer, No. 6 W. & W. board drop.
Hoist, contractor's steam, with 8 h. p. boiler & 5 h. p. engine.
Millers, pl., Garvin No. 12, Cinti. No. 3.
Paper cutter, Golding 36".
Pipe machines, 3", 4", 8".
Polishing stand, d. end, 42"x1 1/2" arbor.
Polishing stand, Cuyahoga dbl. end.
Ripsaw, table, 49"x30".
Roll lathe, United Engr. 26"x18".
Saw, West Haven, hack, 6"x6".
Saw, Economy No. 7, hack.
Slotter, Niles 15".
Straightening rolls, 84x10 Cleveland.

SECOND-HAND MACHINERY

FOR SALE BY

W. P. Little Co.,

1616 Columbus Road, Cleveland, Ohio

LATHES.

14" x 6' American, q. c., t. s.
14" x 6' Porter, c. r.
14" x 6' Bradford.
14" x 6' LeBlond, c. r.

16" x 6' Cincinnati, d. b. g., q. c. g.
16" x 8' Monarch, d. b. g., & q. c. g.
18" x 8' Chard, d. b. g.
26" x 9' Bridgeford, d. b. g., q. c. g.

SHAPERS.

16" Ohio, b. g. crank.
16" Smith & Mills, b. g. crank.

16" Barker, back geared, crank.
20" Kelly, back geared, crank.

DRILL PRESSES.

4' Hammond sensitive radial.

24" Aurora b. g., power feed.

PUNCH PRESSES AND SHEARS.

No. 21 Bliss, o. b. i.
No. 8 Waterbury, open back.
No. 5 Niagara, o. b. i.

No. 6 Rockford, straight side, grd.
No. 7 Rockford, straight side, grd.
No. 315 Bliss pwr. squaring shear.

MISCELLANEOUS.

Blower, No. 8 Sturtevant.
Broach, No. 3-A Lapointe.
Furnace, Frankfort, 16" door.
Grinder, Saxon surface, tbl. 12" x 48".

Hammer, No. 3-A High Speed.
Keyseater, No. 1 Baker.
Screw mche., No. 4 B. & O.
Turret, No. 2 W. & S., air chuck.

FOR SALE BY

Tubor, Velick & Co., Inc., - Lake & Desplaines Sts., Chicago, Ill.

Telephone: Monroe 6813

New and Used Machines.

PUNCH PRESSES.

No. 604 Bliss, (4).
No. 4 Verdin Kappes, b. g.
No. 3 V. & O.
No. 33 Consolidated.

No. 3 Am. Can. dbl. action (2).
No. 35 Niagara.
No. 15 Torris Wold.
No. 15 Waterbury-F. kick pr., (44).

DRILL PRESSES.

20" Canedy-Otto, (20).
20" Barnes, (20).
30" sliding hd. (3), different makes.
20" to 20" Silver and Rockford (20).

Bench drills, with chucks (25).
3-spindle Hoefler.
4" radial, Niles.
4" radial, Mueller.

MILLING MACHINES.

No. 1B Milwaukee universal.
Fox millers, power feed, (15).

Bristol millers, plain, (15).

LATHES.

Bench lathes, (20).
16" x 8' Robinson.
16" x 8' South Bend.
16" x 8' Rahn-Carpenter.
16" x 8' Canedy-Otto.
16" x 10' Hamilton.
18" x 8' Bradford.

18" x 8' Sidney.
18" x 10' American, (2).
20" x 8' Hamilton, q. c.
20" x 14' LeBlond.
22" x 18' Wickes.
Low-swing lathes, Pittsburgh, (3).

GRINDERS.

No. 1 Brown & Sharpe universal.
No. 14 Besly, disc, (3).

No. 15 Besly, disc.

POWER HAMMERS.

25-lb. capacity, Bradley.

100-lb. capacity, Bradley.

SCREW MACHINES.

No. 3 Smurr & Kamen, p. f. (8).

Foster screw machine.

MISCELLANEOUS.

Band saw, 26".
Folder, 36".
Gear hobber, No. 3 Barber-Colman.
Jointers, 12" and 16".
Motors, all sizes, a. c. and d. c.
Paper box stitchee, Latham No. 2 new
Paper balers, (100).
Leather belting. Pulleys, shafting and hangers.

Planer, 36" x 36" x 14' Niles.
Shaper, 24" Milwaukee.
Shear, rotary, 60" Pettingell.
Shear, 52" Niagara power square.
Shear, 11" power square.
Toilet sets, Low-down, 100 sets.
Trucks, 3 lifting.

SECOND-HAND MACHINERY

FOR SALE BY

Riverside Machinery Depot, 251 St. Aubin Ave., Detroit, Mich.

AUTOMATICS.

- Cleveland, 7"-11" A & B, belt dr. (2).
 Nat'l Acme 4 sp., belt dr. No. 52, (2).
 National Acme Nos. 53 and 56.
 4 1/2" Gridley sgl. spdl., d. c. motor dr.

Detroit s. a. 5 spindle driller.
 2 1/2" Gridley mult. spdl., belt dr., (2).
 National Acme semi-auto. driller,
 6 spindle, tooled for piston pins.

ENGINE LATHES—ALL BELT DRIVEN.

- Reed-Prentice No. 60, s. p. d., fitted
 to finish bronze bushings, new (19).
 No. 306 Rivet thd. chasing, new.
 14"x 6" Carroll-Jamieson, q. ch., (6).
 14"x 6" Wolcott, q. ch., with pan.
 14"x 6" Monarch, quick change, (3).
 25"-41"x12" Harrington sl. bed gap.
 20"-40"x8" Standad gap lathe.
 32"x14" Bradford standard duty
 28"x14" Phoenix-C., all grd., sgl. pul.
 28"x14" New Haven, std. duty, (2).

28"x14" Fay & Scott, standard duty.
 24"x16" Lodge & Shipley selective
 head, quick change box.
 24"x12" LeBlond, quick change box.
 24"x14" Fitchburg, standard duty.
 24"x16" New Haven, standard duty.
 26"x12" Fifield, standard duty.
 27"x17" Radford center dr. axle lathe
 22"x14" Rockford, q. c. box, 3-st., new
 22"x14" Walcott & Son, std. duty.
 40 Lathes, smaller sizes.

TURRET LATHES, SCREW MACHINES, ETC.

- No. 1-B Foster hollow hex., s. p. d.
 3 1/2"x60" Lo-Swing, A-1 condition, (7)
 3"x36" J. & L. single pulley, single
 chucking lathes, (2).
 3 1/2"x36" Acme sgl. pulley, flat turret.

30"x12" Niles-B. mfrs. turrets, (2).
 25" Milwaukee manufacturers turrets.
 3"x36" Jones & Lamson double spin-
 dle, (2).

MILLING MACHINES.

- No. 3 Lees-Bradner collet type
 thread miller, 95% new.
 No. 2 Cincinnati plain, cone drive.
 No. 3 Cincinnati plain, cone drive.
 Model B, 24" Briggs mfrs. type.
 No. 3 Burke bench type plain.
 No. 1 1/2 Knight milling & drilling, (2).
 No. 2 B. & S. vertical, cone drive.
 No. 6 Becker vertical, like new.
 Beamen & Smith slab, 2 side hds.

50 Hand screw machines, all sizes.

PRESSES.

- No. 3 1/2 Toledo o.b.i. plain, 2 1/2" str.
 No. 20 Bliss o.b.i. plain, 2" stroke.
 No. 52 Toledo arch geared, new.
 Perkins geared ram drawing d. a.
 No. 4 Toledo o.b.i. plain, 2 1/2" str., (2).

No. 7 Niagara plain, 3" stroke.
 15 ton Hercules press broach.
 No. 10 Bliss s. s. press.
 No. 60 1/2 Toledo s. s. press.

GRINDERS.

- 12" Heald rotary grinder complete
 (2).
 Madison cylinder grinder.
 No. 24-16"x60" Landis crankshaft.
 12"x36" Queen City plain cylindrical.
 12"x36" Landis plain cylindrical.
 20"x72" Landis, gap type.
 No. 106 auto. Rivett internal, new.
 No. 205 Rivett radial, new, (2).
 No. 6-A Bryant internal, (3).
 No. 615 Fitchburg plain cylindrical.
 No. 2 Woods tool and cutter.

No. 190 Greenfield universal t. c. c.
 No. 3 B. & S. univ. reamer & cutter.
 Draper & Hall universal.
 Pratt & Whitney end mill grinder.
 Production surface, hand feed.
 No. 3 Wilmarth & Morman, surface,
 power feed, (2).
 No. 4 Gardner, disc, 16" ring chucks.
 No. 14 Gardner disc, like new.
 27" M. & M. dbl. end disc, complete.
 Emery grinders & buffers, all sizes
 and types.

AIR COMPRESSORS AND PUMPS.

- 9 1/2"x48 2-stage Ingersoll-R., like new
 7x8x8 Marsh steam horizontal, (2).
 24"x16" Bury hor. low p., belt drive.
 8"x6" Gardner-Rix 2-cylinder vert.
 50-Blowers, Exhausters, Ventilating
 Fans, all types, makes, and sizes.
 50-Air Drills, Hammers, Chippers, Grinders, Riveters, all sizes and makes.

19"x14" Chicago Pneu. low pressure,
 horizontal, belt drive.
 10" centrifugal pump, Allis-Chalmers
 60 h. p., a. c. motor driven.

The above are selections from about 3,000 machine tools on our floor. Also large stock of new and used Wood-Working Machinery. No doubt we have what you want, at the right price. Get our proposition.

SECOND-HAND MACHINERY

FOR SALE BY

Knowlton Machine Co.,

Westbrook, Maine

COLD SAWS.

Several cold saws, 95% new, 24" blade. Quality guaranteed. Price sacrificed for quick sale. Circular and prices on request.

FOR SALE BY

D. E. Rowlingson,

240 Jay St., P. O. Box 265, Utica, N. Y.

Iron Working Tools at net cash prices to close out.

Drill, 20" Peerless, slotted base, lever feed, in A1 order.....	\$ 65.
Drills, bench, Burke, new, $\frac{3}{4}$ h. p. motor driven, with Jacobs chuck, (2).....	50.
Drill, bench, 10" Burke, belt driven, new, with Jacobs chuck.....	25.
Drill, vertical, old style, hand lever feed, and c. s.....	10.
Emery stand, $\frac{3}{4}$ " Myers, double end on pedestal.....	20.
Engine lathe, not b. g., 18"x7", 10" chuck, c. r., fric. c. s.....	150.
Engine lathe, 13"x4" Pratt & W., taper attach., b. g., c. s.....	175.
Engine lathe, 10"x45" Meyers, bench type, new.....	175.
Motor, 5 h. p. Cronk, 2 ph., 60 cycle, 220 v., new bearing.....	60.
Press, small, bench, foot.....	10.
Shaper, 24" Gould & Eberhardt, in fine order, with vise.....	250.
Steam pump, small, for boiler use.....	25.
Steam pump, large Dean duplex, in fair shape.....	20.
Truck—case truck, iron handles, with 4 casters.....	15.

All the above machines are in good operating order and ready for immediate shipment. The Meyers Lathe is new—never used.

FOR SALE BY

The O'Brien Machinery Co.,

113 N. Third St., Philadelphia, Pa.

Bolt cutter, 1" Acme.
 Drill, Avey Hi-speed sensitive with motor attached.
 Drills, Moline heavy duty hog, (2).
 Drill press, 25" Buffalo.
 Gear cutter, 36" Whiton.
 Grinder, 6"x32" Norton pl grinder.
 Grinder, No. 1 Norton universal.
 Grinder, No. 2 Norton universal.
 Grinder, No. 2 Acme univ. tool & c.
 Grinder, No. 14 Bealy disc, with press.
 Grinder, 2 Wilmarth & Morman hand feed surface grinders.
 Hammer, 40 lbs. Williams-White Yeakley, belt drive.
 Hammer, 650 lbs. Williams-W. Y.
 Hammer, 800 lb. Erie City, single frame steam.
 Hammer, 800 lbs. Bement-Miles, double frame steam.
 Hammer, 1200 lbs. Bement-Miles, double frame steam.
 Lathe, 8"x108" Fitchburg Lo-Swing.
 Lathe, 16"x8" Rahn-Larmon.
 Lathe, 18"x9" Lehman.
 Lathe, 18"x10" Monarch.
 Lathe, 20"x9" Lehman.
 Lathe, 20"x12" Monarch.
 Lathe, 20"x14" Powell.
 Lathe, 23"x12" Blaisdell.
 Lathe, 27"x10" S. & B., heavy duty.
 Miller, No. 25 Bilton plain.

Miller, No. 2-AU Garvin universal.
 Miller, No. 3 $\frac{1}{2}$ Fox.
 Nut tapper, 6-sp, 1 $\frac{1}{2}$ " Acme semi-auto.
 Pipe machine, 4" Oster.
 Pipe mche., 4" Oster, motor driven.
 Pipe mch., 4" Jarecki, motor driven.
 Pipe machine, 2" Oster.
 Pipe machine, 8" Curtis & Curtis.
 Planer, 24"x24"x8" Powell.
 Planer, 36"x36"x12" Powell, 4 hds.
 Planer, 38"x36"x12" Powell, 2 hds.
 Planer, 50"x50"x18" Betts.
 Presses, approximately 50, assorted sizes, Waterbury-Farrell Foundry, weights approx. 2,000 to 5,000 lbs.
 Presses, Toledo No. 53 straight sided power, 3 $\frac{1}{2}$ " stroke, (7).
 Punch, 30 thr. Long & A., motor dr.
 Punch & sh., 12" thr. Fisher, dbl. end
 Radial drill, 36" Prentiss, sgl. pulley.
 Riveter, 8"x8" Vulcan.
 Saw, 6" Nutter & Barnes circular.
 Screw machines, No. 2 Brown & Sharpe, wire feed.
 Screw machine, No. 2 Warner & Swasey, wire feed.
 Shaper, 20" Smith & Mills, b. g.
 Shapers, 20", 16" and 14" Hollingh.
 Shapers, 24", 20" and 16" Ohio.
 Turret lathe, No. 6 $\frac{1}{2}$ Bardon & Oliver, wire feed, cabinet base.
 Turret lathes, No. 12 $\frac{1}{2}$ G Garvin, 2" wire feed capacity (4).

SECOND-HAND MACHINERY

FOR SALE BY

Box 28 Care of A. H. Hitchcock, 1235 Caxton Bldg., Chicago, Ill
MACHINE SHOP.

First-class machine shop, blacksmith shop, brass and iron foundry, in good location; best equipped shop between Memphis and St. Louis.

FOR SALE BY

Cyril J. Bath & Co., 1603 St. Clair Ave., N. E., Cleveland, O.

BOLT CUTTERS AND TAPPERS.

$\frac{1}{2}$ " cap. Landis, excellent, (2).

$\frac{1}{2}$ " Acme 6-spindle vertical tapper.

DRILLING MACHINES.

20" Silver, whl. and lever feed; new.

24" Aurora, sliding head, gear feed with tapping head, (4).

20" Silver, back grd., power, wheel and lever feed; new.

28" Cincinnati-Bickford, sliding hd. and tapper, (4).

20" Ryerson back geared.

Bausch 12-spindle, $\frac{3}{4}$ " capacity, square head.

24" Cincinnati-Bickford, sl. hd., with and without tapping attach., (4).

28" Sibley b. grd., power feed; new.

GRINDERS.

No. 11 B. & S. pl., cap. 5x30"; good.

New Yankee drill 2 $\frac{1}{2}$ ".

Landis 10x20", plain, with int. grinding attachment; good.

18" Bryant int.; excellent shape.

Yankee twist drill; good.

16x48 Cincinnati universal; excellent condition.

LATHES.

16"x 6' LeBlond, q. c. g., comp. rest, taper attach.; good.

12x48" Blount spd., good, chuck, etc.

18"x 9' Lehmann, q. c. g., comp. rest, taper attach.; new.

14"x 6' LeBlond, c. r., belt fd.; good.

20"x10' Wickes, q. c. g., compound rest; new.

16"x 8' LeBlond, comp. rest, q. c. g., and chuck; good.

20"x10' Schumacher-Boye, q. c. g., comp. rest; good.

16"x 6' American, all geared head, motor drive, late model; good.

20"x16' American, q. c. g., dbl. b. g., heavy model; excellent.

MILLERS.

No. 2-A Brown & Sharpe universal, gear drive and feed.

Type A Briggs Lincoln; excellent.

No. 3 Brown & Sharpe plain, cone drive, gear feed; good.

No. 2 Brown & Sharpe vertical; fair.

No. 3-B heavy Brown & Sharpe plain, single pulley, excellent.

No. 14-B Milwaukee univ., single pulley dr., pwr. fds. in all directions, div. hd., vert. at.; very good.

No. 12 B. & S. Lincoln; good.

20"x7 $\frac{1}{2}$ "x18" Osterlein pl.; old, fair.

No. 7-H Becker, Lincoln; fair.

24"x7 $\frac{1}{2}$ "x18" Osterlein plain, 10" dividing head; good.

PLANERS.

24"x24"x6" Gray, old but good

24"x24"x6" Liberty, new, 1 head

SHAPERS AND SLOTS.

16" Cincinnati b. g. crank, new.

20" Ohio b. g. crank, good.

20" Whipp b. g. crank, new.

16" Betts crank slotter, good.

TURRET LATHES AND SCREW MACHINES.

24" Gisholt turret, 6 $\frac{1}{2}$ " hole, good.

21" Gisholt turret, 3 $\frac{1}{2}$ " hole, good.

No. 4 B. & O., pwr. fd. to turret and slide, large assortment tools and collets; very good, (3).

No. 53 National Acme standard automat cs., $\frac{1}{2}$ " cap., with collets and tools; in good condition, (9).

MISCELLANEOUS.

Air compressor and tank.

Draw benches, No. 2 Waterbury-F., extra cap. 20", excellent, 60,000 lbs. capacity.

Arbor press, No. 5 Greenerd geared, very good.

Forcing press, 15-ton Lucas, power, excellent.

Band saw, metal, Klemm, good.

Welder, Federal special, spot, almost new.

Boring mill, No. 21 Lucas horizontal, 2 $\frac{1}{2}$ and $\frac{1}{2}$ " spindles; excellent.

Welder, Federal 10-A, butt, capacity 1 $\frac{1}{2}$; excellent.

Centering mche., Cadillac; excellent.

Centering mche., Whiton; good.

Cold saw, No. 11 $\frac{1}{2}$ Higley, 4" rd. fair.

Crankshafts for No. 59 Toledo and No. 71 $\frac{1}{2}$ Bliss presses.

Keyseater, No. 1 Baker, good.

Twist drills, reamers, milling cutters, etc.

SECOND-HAND MACHINERY

FOR SALE OR TRADE BY

Box 304.

Earlington, Ky.

One 24" heavy duty Milwaukee Shaper, cone drive, 95% new; used 8 months on light jig and tool work; complete with vise and countershaft; weight, approx. 4,400 lbs. Would trade for first-class engine lathe 24" or 22" swing, 12" bed; must be modern and of standard make; give full data in first letter.

FOR SALE BY

The H. A. Smith Mch. Co., 501 E. Water St., Syracuse, N. Y.

Air compressor, 10x8 Ingersoll-Rand, class ERI.

Cold rolled steel:

7 tons 1 15-32x.019

4 tons 3 1/2 x.025

5 tons 3 11-16x.048

Drill, Barnes 20" 4-spd. gang, automatic approach feed mechanism.

Galvanizing outfit complete, Hanson & VanWinkle, for small parts.

Gear generators, bevel, 8" Gleason (2).

Gear generators, bevel, 18" Gleason (6).

Grinders, plain, No. 11 Brown & Sharpe, late style (4).

Grinder, face, 84" Diamond, with 30 h. p. motor.

Grinder, universal tool and cutter, Norton No. 1.

Lathe, 14"x6" Monarch.

Lathes, 16"x8" Monarch (5).

Lathe, 16"x8" with pan, taper and collets, Hendey.

Lathe, 16"x8" Walcott.

Miller, pl., No. 2 Kempsmith.

Miller, univ., No. 3 Kearney & T.

Multi automatic, serial number above 10500.

Pinion blockers, 2-sp. Gould & E., serial numbers above 3100 (3).

Pinion blocker, 8-sp. Gould & E., serial number above 3300.

Profiler, No. 4 Garvin, pwr. rty. tbl.

Punch press, Rockford No. 316, grd.

Punch presses, No. 2 Rockford inc. (2)

Radial blast sand blast barrel, 36x44 No. 3 Standard.

Screw machine, hand, No. 0 B. & S.

Screw machine, 4-spindle automatic, 2 1/2" National Acme.

Screw mchs., Warner & Swasey No.

4, with air chuck equipment (6).

Shaper, traverse, Hendey, 15" str.

Turret lathes, 3x36 Jones & L. (3).

Turret lathes, univ., 16" Acme, friction head, chasing bar (2).

FOR SALE BY

Brown Machinery Co., 2323 N. 9th St., St. Louis, Mo.

Boring mill, 60" Sellers, 2 heads.

Drill, 30" Gould & Eberhardt.

Drill, 30" Prentice.

Drill, 24" Sibley & Ware.

Drill, 26-spindle Baush.

Drills, 4, 5 & 6 spindle Allen.

Drill, radial, 3' American.

Drills, Nos. 1 & 3 Barnes hor. radial.

Gear cutter, 30" Whiton.

Grinder, aerial, Cincinnati.

Grinder, surface, 1 LaSalle.

Grinder, 14" Besly.

Grinder, No. 2 Oesterlein univ.

Grinder, Woods No. 24 univ.

Grinder, drill, W. & M. B. Pt.

Hammer, 1200 lb. Chambersburg, double frame steam.

Hammer, 800 lb. Lane, double frame steam.

Lathes, 14", 16", 20", 26" Walcott, d. b. g., q. c. g.

Lathe, 16"x 6" Sidney, q. c. g.

Lathe, 24"x10" Fay & Scott.

Lathe, 26"x12" 10" Wickes, d. b. g., q. c. g., taper attachment.

Miller, 3-B Owen, vert. attachment.

Miller, 1-B Fox horizontal.

Miller, No. 4 Hendey, b. g.

Miller, No. 7-H Becker.

Miller, No. 2 American Lincoln.

Motors, 10, 40, 50 h. p., G. E.

Planer, 24"x24"x6" Lodge & Davis.

Planer, 26"x26"x6" Pond.

Presses, Swaine Nos. 57 & 35.

Press, No. 5 Bliss Stiles.

Profilers, two-spindle, Pratt &

Whitney, Putnam, Reed-Prentice.

Punch, No. 20 Excelsior, cap. 3/4".

Riveter, air, P-A.

Roll, plate straightening, No. 0

Hilles & Jones.

Screw machine, hand, Smith.

Shaper, 16" Whipp, s. g.

Shaper, 17" Smith & Mills, s. g.

Shears, 134 Marshalltown, 4 1/2".

Shear, No. 31 Exc. alligator.

Shear, 62" Peerless, 14 ga.

Shear, 52" Niagara, ft. sq.

Shear, 37" Bertsch, foot gap.

Stake riveter & punch, No. 3 Hilles & Jones, 5' throat.

Turret lathe, 24" Wysong & Miles.

Turret lathe, 16" Gisholt.

Turret lathe, No. 3 Wood.

SECOND-HAND MACHINERY

FOR SALE BY

The Reeve-Fritts Company, - 37 So. Desplaines St., Chicago, Ill.

Grinder, No. 1 Cin'ti. tool & cutter.
Grinder, No. 1 LaSalle. surface.
Lathe, 12"x 5' Davis, with taper att.
Lathe, 14"x 6' Rockford, dbl. b. g.
Lathe, 15"x 6' Sundstrand, c. r.
Lathe, 16"x 8' Flather, c. r.
Lathe, 18"x 8' Rockford, dbl. b. g.

Lathe, 24"x14' Lodge & S. pat. hd.
Lathe, 26"x12' Bridgeford, q. c. g.
Miller, No. 1 Standard hand, pr. id.
Miller, No. 3 Cincinnati universal.
Planer, 24"x24"x 6' Cincinnati.
Planer, 30"x30"x14' Powell, 2 heads.
Press, No. 4-E Am. Can. arch., 30".

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

MILLING MACHINES.

No. 2 Cincinnati univ., sgl. pulley.
No. 2 Kempsmith univ., vert. hd.
No. 2 B. Rockford univ., vert. hd.
No. 2 B. & S., plain, single pulley.
No. 2 Van Norman duplex.
No. 5 Becker vert., rotary table.
No. 3 B. & S. vertical, rotary table.

No. 3 Ingersoll vertical, sgl. pulley.
Nat. Transit plain, heavy.
Taylor & Fenn vertical.
Rockford horiz. vert., bench type.
Hardinge vert., bench type.
Hardinge horiz., bench type.
Becker, Bristol, Whitney, U.S. hand.

LATHES.

38"x14' Niles Bement, qk. change.
38"x20' Fish
24"x10' American, quick change.
26"x12' Niles Bement, qk. ch. (2).
28"x16' Rahn Carpenter, 3" hole.
24"x10' LeBlond, quick change.
18"x 8' Sidney
18"x11 1/2' Reed, taper attach.
20"x 8' Monarch, quick change.
16"x 8' Pratt & Whitney, taper (2).
16"x 6' Reed.

16"x 6' Hendey, taper attach.
15"x 6' Hendey, tap. & draw attach.
14"x 6' Von Wyck, taper attach.
14"x 6' Lodge & Shipley, q. c. g. hd.
12"x 5' Monarch, quick change.
12"x 5' Rockford.
12"x 5' Vernon, quick change.
8 Hardinge, Rivett, Stark bench
lathes, chasing attach., turrets.
8" Porter Cable.

RADIALS AND DRILL PRESSES.

6' Reed Prentice, tap. att., sgl. p.
42" Fosdick, tapping attachment.
32" Cincinnati.
25" Kokomo high sp., tapping att.

24" Foote-Burt heavy.
3-sp. Avey high speed.
48" Almond high speed, wall (4).
Bicycle rim drills.

TURRET LATHES, SCREW MACHINES.

24" Jones & Lamson (2).
Pratt & Whitney flat turret.
34" Greenlee flat turret.
No. 3 Warner & Swasey universal.
No. 3 Bardons & Oliverscrew mche.

No. 1 B. & S. semi-auto screw mche.
No. 00 B. & S. auto. screw machine.
No. 00 B. & S. auto. form.
No. 3 Foster plain screw machine.
No. 1 Foster plain screw machine.

GRINDERS.

No. 1 B. & S. universal.
11"x20" B. & S. plain.
12"x30" Landis universal.
No. 70 Heald internal.
Van Norman, ball bearing.
No. 2 Ohio universal.

Rivett internal.
10"x36" Landis cam grinder.
Pratt & Whitney form grinder.
No. 1 Steel Products univ. gauge
grinder.

PRESSES AND PLANERS.

No. 5 Toledo.
No. 3 American Michigan, hornimg.
25" New Doty, new.
No. 3 Moore screw press.

36" Power arbor press.
48"x12' American planer, 2 heads.
24"x 5' Pease planer.
16"x36" Pratt & Whitney planer.

MISCELLANEOUS.

Air compressor, 8"x9" Ingersoll.
Band saw, metal, 30".
Benders, power.
Bolt cutters, 2" Acme, 1" Landis, 1/2"
Geometric.
Gear cutter, No. 5 Brown & Sharpe.
Keyseaters, No. 3 Becker, No. 2
Davis.

Metal separator, Milwaukee.
Piston machine, Reed Prentice.
Profiler, 2-sp. Pratt & Whitney.
Riveters, Grant and Schuster.
Rollers, 12"x12', 5"x8', 8"x10".
Shear, 6", power square.
Shear, 48", circle.
Steel corrugating machine, 7"x36".

SECOND-HAND MACHINERY

FOR SALE BY

Scott-Bansbach Machinery Co.,

130-132 S. Clinton St., Chicago

Punch, sgl. end, 30" L. & A., 1 1/4" thru 1", mtr. dr. with 10 h. p., 220 v., a. c. mtr.
Automatic, 4-spindle 1 1/4" Gridley. Drill, No. 310 Baker hvy. duty, 3" cap.
Boring mill, 72" Cincinnati, 2 swivel Lathe, 24"x12" Schumacher & Boye.
heads, motor drive. Lathe, 20"x 8" Whitcomb-B., q. c.
Boring mill, 36" geared hd., adjust- Miller, No. 1 1/2 Rockford, plain.
able rail, single turret head. Planer, 38"x38"x10' Gray, 1 head.

FOR SALE BY

Norton Broadway Machinery Co.,

238 Broadway, Cincinnati, O.

Used Bargains.

Grinder, 16"x36" Norton external.....	\$ 980.
Lathe, 8"x42" Rivett precision.....	350.
Lathe, 17"x8' Champion tool room.....	550.
Lathe, 16"x6' Bradford, loose change, taper.....	225.
Lathe, 20"x10' U. S., quick change, 90% new.....	600.
Lathe, 26"x18' Bullard, motor.....	925.
Miller, No. 2 Hendy universal, vertical attachment.....	675.
Planer, 34"x24"x10' Cincinnati, nearly new.....	1300.
Planer, 36"x36"x12' Belmer, 3 heads.....	1250.
Radial drill, 4' Cincinnati-Bickford No. 1, motor.....	900.
Shaper, 20" Kelly crank, b. g., power down feed.....	500.
Shaper, 24" Ohio crank, heavy, back geared.....	675.
Shaper, 34" Walcott, geared.....	450.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1001-3-5 N. Sixth St.,

St. Louis, Mo.

LATHES.

11"x 4' Shepard.	24" Gisholt.
13"x 8' Barnes.	28"x18' Springfield, motor-drive.
18"x10' R. & L., q. c. g.	33"x20' Draper.
20"x 9' Davis.	36"x18' Fitchburg.
25"x18' Niles.	54"x16' Putnam.
24"x12' Lodge & Shipley.	50"x20' New Haven, trip. geared.

SHAPERS.

Smith & Mills, all sizes.	24" Gould & Eberhardt.
16" Whipp.	36" Cincinnati, 8' traveling head.
20" Kelly.	

DRILLING MACHINES.

Barnes, all sizes.	40" Aurora.
24" Aurora.	Pawling & Harnischfeger horiz.
30" arm Fosdick radial.	

MILLERS.

No. 1 1/2 Brown & Sharpe plain.	No. 4 LeBlond plain.
No. 12 Kempsmith plain.	No. 5 Cincinnati.
No. 3 Kempsmith universal.	No. 2 1/2 Rockford universal.
No. 3 Becker plain.	Owen duplex.

MISCELLANEOUS.

Bulldozer, 75-ton Lorie.	Pipe machine, 12" Curtis Forbes.
Grinder, 5"x18" Ott.	Saw, No. 12 Higley.
Grinder, 8"x30" Modern.	Screw machine, 1 1/4' Foster.
Grinder, No. 1 Brown & Sharpe.	Screw machine, No. 1 Wood Turret.
Grinder, 8"x18" Ott universal.	Screw machine, No. 3 Wood Turret.
Hammer, 1000 lb., steam.	Shear, 5' squaring No. 14.
Keyseater, No. 7 Catlin.	Shear, squaring, 8' Curtis.
Marking machine, Mathews.	Slotter, 36" Niles.
Motors: 5, 10, 15, 20 & 50 h. p., d. c.	Slotter, 48" Betts.
Motors: 5, 10, 15, 20 & 30 h. p., 3	Steam pumps, Union.
phase, 60 cycle.	Tapper, No. 2 Garvin.
Pipe machine, Forbes Shear.	

SECOND-HAND MACHINERY

FOR SALE BY

Badger-Packard Mchry. Co., 133-9 W. Water St., Milwaukee, Wis.

Boring mill, 34" Colburn.
 Brake No. 135-36" Chicago, power,
 3/16" capacity.
 Compressor, 12x12 Gardner, b. d.
 Gear hobbors, Adams No. 1 and No. 3.
 Miller, No. 3 Becker-Brainard, vert.
 Miller, No. 7-H Becker, Lincoln type.

Planer, 24"x24"x16" Fitchburg.
 Planer, 36"x36"x9" Lodge & Davis.
 Press, No. 3-PG Ferracute geared.
 Slotter, 2 1/2" stroke Pratt & Whitney.
 Turret lathes, No. 6 Warner &
 Swasey, 5 1/2"x10" model "A" Potter
 & Johnston.

Large stock of other equipment; send us your inquiries.

FOR SALE BY

Herman L. Winterer.

943-53 N. Front St., Philadelphia, Pa.

LATHES.

43"x17 1/4" Bement-Miles.
 42"x16" Niles taper att.
 37 1/2"x14" Johnson d. b. g., q. c. f., t. a.
 32"x12" Pittsburgh, heavy duty, q. c. g.
 26"x16" 6" American, q. c. g.
 27"x12" Bullard.
 26"x11" Wickes, q. c. g.
 28"x10" Niles, q. c. g.,
 25"x14" Hendey, q. c. g., taper attach-
 ment, oil pan, (2).
 24"x14" Porter.

21 1/2"x8 1/2" LeBlond.
 20"x8 1/2" Walcott, d. b. g., q. c. g., (2).
 20"x8" Whitcomb Blaisdell, q. c. g.
 20"x10" 6" American pat. hd., q. c. g.
 18"x8" Prentice, q. c. g.
 19"x10" Draper, patent head.
 18"x7" Chard, d. b. g., semi q. c. g.
 18"x6" to 8" lathes, (6).
 16" Lathes, (10).
 And many others.

TURRET LATHES.

3 1/2"x28" Pond, triangle.
 3x36" Pratt & Whitney, hollow hex.
 20x17" 6" Pratt & Whitney, back grd.
 19"x7" Fay & Scott, back grd.
 No. 22 Garvin Monitor.
 17"x6" Warner & S., bk. grd., (2).

16"x6" Johnson, back grd.
 No. 5 Bardons & Oliver, back grd.
 No. 3 Bardons & Oliver back grd.
 14 1/2"x5 1/2" 3" Pratt & Whitney, (2).
 No. 3 Foster Kimball.

DRILL PRESSES.

40" Barnes horizontal radials, (2).
 36" Bickford radial, circular base,
 motor driven.
 14" 6-spindle Allen sensitive.
 14" 4-spindle Allen sensitive.

36" b. g., sliding head drill.
 20" Champion, new, (6).
 Plain drills, all sizes.
 Drill presses, assorted sizes.

MILLING MACHINES.

38"x6" Ingersoll horizontal slab.
 No. 5 Cincinnati, table 9 1/2"x50 1/2".
 No. 15 Garvin, table 12x42".
 No. 3 Becker Brainard, table 12x40".
 No. 3 Hendey-Norton, q. c. g.
 No. 0Y Brown & Sharpe plain, (2).

No. 2B heavy, Brown & Sharpe,
 single belt drive, q. c. g.
 Whitney hand miller.
 No. 27 Industrial Works, Lincoln
 type, table, 7x27".
 Gooley & Edlund, 7 1/2"x46" table.

PLANERS AND SHAPERS.

48"x48"x16" Pond planer, 3 heads.
 30"x30"x8" Putnam planer.
 26 1/2"x26"x6" Hendey planer.
 48" Morton draw-cut shaper.
 39" Pedrick & Ayer, open side.
 26" Cincinnati.

18" double head, 16" bed Bement
 shaper, motor driven.
 16" Gould & Eberhardt shaper.
 14" Flather shaper.
 14" Warren shaper.

MISCELLANEOUS.

Boring mill, 100" Sellers, vert., dbl. hd.
 Boring mill, car wheel, 60" Newton.
 Boring, drilling and milling machine,
 17 1/2" Bement Niles horizontal.
 Die sinking mch., Keller, motor dr.
 Grinder, 13 1/2"x5" Landis universal.
 Grinder, disc, No. 17 Besly.
 Grinder, disc, No. 1 Besly.
 Hammer, 200 lb. Beaudry Cham-
 pion.

Hammers, 60 lb. Bellefonte upright; 2.
 Keyseaters, 18" stroke Morton, (2).
 Keyseater, Mitts & Merrill No. 5.
 Pipe machine, 8" Eaton, Cole & B.
 Punch presses, all sizes, (55).
 Punch & shear, Industrial Wks. d.e.,
 capacity 1/2" in 1/2", squaring 1 1/2"x6".
 Slotter, Newton, 18"; cir. table.
 Slotter, Bement 10"; cir. table.
 Tooth round g mch., Schuchardt & S.

Large assortment of General Machinery. Send for Complete List.

SECOND-HAND MACHINERY

FOR SALE BY

The Randle Machinery Co., 1723 Powers Street, Cincinnati, Ohio

ENGINE LATHES.

18" x 8' Lodge & Shipley, q. c. \$ 550.	24" x 16' Star, loose change \$ 600.
16" x 6' South Bend, loose chg. 300.	36" x 14' Putnam, loose change 1,400.
18" x 8' Barker, loose change. 450.	36" x 24' American, quick chg. 2,350.

PLANERS.

30" x 30" x 14' American, two heads, belt drive \$ 1,500.	
36" x 36" x 14' American, two heads, belt drive 1,800.	
Pedrick & Ayer open side, planes 30" wide, bed 11' long. 1,000.	
60" x 60" x 12' Sellers, widened to 72", four heads. 2,500.	

MISCELLANEOUS.

Boring mill, 60" Niles vert. \$1,500.	Millers, No. 14 American pl. \$ 775.
Boring mill, 19" Niles vert. 4,500.	Miller, No. 14 American univ. 1,000.
Boring mill, No. 2 Barret, 24x15 1,600.	Radial drill, 6" Bausch-H. pl. 650.
Drill press, 45" upright, back geared, power feed. 300.	Shaper, 16" Barker, b. g. crank 450.
Grinder, No. 60 Heald cylinder 1,250.	Shaper, 24" Barker, b. g. crank 625.
Miller, No. 24 Rock'd univ. 800.	Shear, 11' squaring, belt drive, cap. 1/2" steel. 1,200.

Many other bargains. Send us your requirements.

FOR SALE BY

H. D. Warner,

26 High St., Hartford, Conn.

Blower and fan, Garden City No. 4 \$ 100.	Planer, 24" x 24" x 6' 300.
Boring mche., Lucas horiz. 1,000.	Stud lathe, 14" x 8' Reed. \$ 200.
Grinders, chucking, Bryant No. 6, (2), each. 450.	Sand blast outfit on wheels, Pangborn. 250.
Grinder, planer type, B. & S. No. 3. 500.	Screw mchs., 3 1/2" Gridley, s. s., (6), each. \$500 to 600.
Grinders, chucking, Bryant No. 6, (2). 200.	Screw mchs., 3 1/2" Cleveland, model A, (2), each. 900.
Lathe, Reed. 200.	Screw mche., mult. spindle, No. 53 Acme. 500.
Milling mchs., Lincoln type, (12), each. \$75 to 250.	Screw mche., mult. spindle, No. 54 Acme. 550.
Milling mchs., Becker, large, hand, (2), each. 125.	Screw mche., mult. spindle, No. 55 Acme. 500.
Milling mchs., P. & W., (16), 12 lt. automatic, each. 250.	Swaging mch., Dayton, large. 500.
Moulding mch., 2-sp. variety, 200.	Tilting turret lathes for chucking, Wood, no cross slide, (3) 150.

500 American Split Pulleys in large sizes, 36" to 60" diameter.

FOR SALE BY

A. M. Stoehr Machinery Co., 844-846 North Wells St., Chicago, Ill.

Blue printing and drying machine, continuous, 42" cap., 220 volt, d. c.	Lathes, all sizes.
Bolt cutter and tapper, 1/2" cap.	Pipe machine, 6" Jarecki, mtr. dr.
Boring mill, horizontal, 3" bar.	Milling machines, Nos. 1 and 2 universal, also 15 other sizes plain.
Boring mills, 28 & 40" Bullard.	Planer, 24" x 24" x 6' Cincinnati.
Drill, 5' Niles radial, motor drive.	Presses, No. 4 Robinson, Nos. 3A & 4 Am. Can, Nos. 30 & 45 Crosby.
Drill, 5' Bickford radial, motor dr.	Punch & shear, No. 13 W. & W. Co., 38" throat, arct. jaw, 1 1/2" in 1".
Drill presses, new, 20", back gear, power feed, each \$120.	Saw, metal band.
Drill pr., 2-sp. Moline "Hole Hog".	Screw machines, No. 1 Pratt & Whitney, No. 53 Acme auto., 1 1/2" and 2" Cleveland sgle. spdl., 2 1/2" Gridley, single spindle.
Gear cutter, Belton No. 10.	Shears, bar splitting and square.
Gear cutter, 24" Gould & E.	Tapping machine, Tuttle, 1/2" cap.
Gear cutter, 60" Gould & E.	Tell call signal system.
Grinder, Heald, piston ring, mag. ca.	Turret lathes, No. 5 B. & O., 16" W. & S., 18" P. & W. geared hd.
Grinder, 3x18 Norton.	
Grinder, No. 75 Heald.	
Grinder, 12x36 Landis plain.	
Grinder, No. 16 Blanchard, 30" ck.	
Hammers, 500 lb. Beaudry, & others.	
Keyseater, No. 2 Davis.	

SECOND-HAND MACHINERY

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

"Machinery is our Middle Name"

Air compressors, 4x4, 6x6, 8x8.
Boring machine, Rockford horiz.
Bulldozer, W. & W. No. 24.
Cold saw, Lea-Simplex No. 18.
Cut-off mchs., Davis 6", H. & R. 4".
Drill presses, all sizes, single and multiple spindle, 8 large slid. hd.
Gear hobbers, No. 3 Farwell and Garvin double spindle sprocket.
Gear shaper, 36" Fellows.
Grinders, cylindrical, surface, knife, univ., centerless, emery stands.
Lathes, large stock new and good used, all sizes, q. c. g. & standard.
Keyseaters, LaPointe, Davis No. 2.

Milling machines: Bristol and U. S. hand; LeBlond No. 1 1/2 univ.; Cin'ti No. 2 plain; Becker and Hendey Lincoln; Becker s. d. vertical; Briggs B 72" trav.
Planers, 24"x24"x6' Ohio and Amer. Presses, Niagara, Swaine, Emco, o. b. i. & straight back & kick.
Rivet spinners, vertical and horiz.
Screw machines, B. & S. No. 60, P. & W., 3 Gridley auto. 4 sp. 24".
Shapers, 16 & 20" Cincinnati b. g. 24" Gould & Eberhardt, 16" Hendey.
Wood-Work'g & Sheet Metal Tools.

FOR SALE BY

The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.

ENGINE LATHES.

12"x 4' Porter-Cable, c. r., q. c. g., pan bed, (4).
14"x 6' Hamilton.
13"x 5' Willard, c. r.

TURRET LATHES AND

14" Lodge & Davis, plain head.
24" Davis turret boring and chucking lathe, with forming rest.
22" Lodge & Shipley heavy duty turret boring lathe.
1 1/2" Acme screw mche., p. f. to tur., (2).
No. 2-A Warner & Swasey g. h. turret lathes, (2).
No. 3-A Warner & Swasey g. h. turret lathe.

14"x 6' Prybil, stud.
15"x 6' Sebastian, c. r., geared hd.
16"x 6' Reed, r. and f.
18"x 6' Blaisdell, p. r. and t. a.

SCREW MACHINES.

26" Gisholt heavy duty turret lathe.
16" Warner & Swasey, plain head, with air chucks (3).
2"x24" Jones & Lamson g. h. flat turret lathe.
No. 60 Brown & Sharpe auto, (4).
No. 6 Brown & Sharpe auto. (6).
No. 2 Brown & Sharpe auto. (3).
1 to 1 1/2" Model A Cleveland auto.

MILLING MACHINES.

No. 1 Rockford, hand, p. f.
No. 15 Garvin plain, b. g.
No. 22 Garvin, vertical spindle.

Valley City, pl., with dividing head.
No. 6 Becker, vert., rotating table.
No. 13B Brown & Sharpe plain.

GRINDERS.

No. 1 Detroit Centerless.
No. 10 Cochrane-Bly auto. bench saw filing machine.
No. 1 Brown & Sharpe, univ., (2).
Type "DE" Hisey-Wolf internal.

Gisholt tool grinder.
No. 14-16 Besly, wet ring wheel.
6"x18" Landis, pl., single pulley dr.
No. 11 B. & S. plain grinders.

HAMMERS.

Coffman post pwr. dr. hammer 25 lbs.

Cady belt drop hammer, 100 lbs.

METAL CUTTING TOOLS & SQUARING SHEARS.

Excelsior power hack saw.
12" Burke metal cold saw.

Higley cold saw.
No. 15 1/2 Higley cold saw.

PUNCH PRESSES.

No. 264 Consolidated, geared, dbl. action cam drawing.

No. 83 Bliss, straight side, geared.

GEAR CUTTERS.

26" No. 3 Brown & Sharpe auto., (2).
60" Eberhardt, spur.

No. 13 Brown & Sharpe auto., (2).

MISCELLANEOUS.

Boring mche., 23" swing, Star horiz.
Boring mill, 34" Colburn.
Brake, 36" P. S. & W. cornice brake, 20 gauge capacity.

Drills, sgl. sp. upright sens. (2).
Fender equip., Yoder, complete.
Planers, 22"x22"x5' Putnam, 1 hd., (3).
Polishing lathes, City Machine Co.

SECOND-HAND MACHINERY

FOR SALE BY

P. Prybil Machine Co., Inc. 512-524 W. 41st St., New York, N. Y.

LATHES.

14"x 6' stud and bolt, P. Prybil.	30"x16' q. c. g., Pond.
16"x 6' polishing, P. Prybil.	30"x32' back geared, shaft lathe.
30"x12' safety stops, taper attachments, Lodge & Shipley.	36"x12' q. c. g., Lodge Davis.
24"x14' q. c. g., Lodge & Shipley.	40" raised 50"x14', q. c. g., Pond.

MILLING MACHINES.

64"x16" table, spindle cone, Cinn.	68"x16" tbl., s. box and pump, Cinn.
------------------------------------	--------------------------------------

DRILL PRESSES.

9" Pulley drilling & tapp. P. Prybil.	17" back geared, Aurora.
12" post drill, 11"x18" table, hand feed, P. Prybil.	20" adjustable table, Reed.
12" sensitive, 11"x11" table, Washburn Shops.	30" sliding hd., adjustable tbl., Pond.
12"x4 spindle, 36"x12" table, Reed.	30" sliding hd., power feed, Pond.
12 spdl. mult., 18"x24" tbl. Baush.	48" arm radial, 37"x6' bed, univ.
	72" arm radial, 4' 10"x8' 6" bed. Warren.

PULLEY LATHES.

36" dia. x24" face, 2 heads, Niles.	50" dia x30" face, 2 heads, Niles.
-------------------------------------	------------------------------------

PLANERS AND SHAPERS.

16" stroke, self-feed, Steptoe.	36"x36"x 6', one head, Pond.
24" stroke, friction gear, Hendey.	48"x48"x16" open side, Detrick & Harvey.
26"x26"x 6' one head, Pond.	

BORING MILLS.

50" pulley borer, power feed, Niles.	84" 2 heads, 67" table, Niles.
60" 2 heads, 54" table, Niles.	84"x36"x3" bed horiz. borer, B. & S.

MISCELLANEOUS.

Air compressor.	Electric drills; air riveters.
Arbor presses, various sizes.	Forges and blowers.
Broaching machine.	Grinders, various sizes.

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INCORPORATED**

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LATHES

- 54"x21" Pond.
- 50"x60" Johnson, ex. hvy. pat.
- 50"x30" Johnson, ex. hvy. pat.
- 50"x14" American.
- 36"x14" Bridgeford, geared head.
- 28"x12" Boye & Emmes, qck. chg.
- 26"x18" Bradford, motor driven.
- 26"x14" Niles-B.-P., quick change.
- 26"x10" Bridgeford, quick change.
- 24"x12" Schumacher & Boye, q. ch.
- 21"x 8" McCabe, q. c.
- 18"x10" McCabe, q. c.
- 16"x 8" Lodge & Shipley, q. c.
- 34"x60" Fitchburg "Lo-Swing".

McCABE 2-in-1 DOUBLE SPINDLE LATHES

- 26-48"x24", motor drive.
- 26-48"x16" motor drive.

TURRET LATHES & SCREW MCHES.

- 28" swing, Pond, rigid type.
- 24" swing, Gisholt, motor driven.
- 21" swing, Gisholt, gap.
- 21" swing, Gisholt, 3/4" hole.
- 3x36" Jones & Lamson, grd. hd.
- 2x24" Jones & Lamson, grd. hd.

BORING MILLS.

- 10-16" Betts, double head.
- 54" Niles, single head.
- 48" "Gisholt", double head.
- 42" Bullard, double head.
- 30" Bullard, turret head.

PLANERS

- 84"x60"x30" Pond, 4 hds., motor dr.
- 60"x60"x17" Sellers, 3 heads.
- 48"x48"x18" Pond, 2 heads.
- 48"x48"x14" Sellers, 3 heads.
- 42"x36"x12" Gray, 2 heads.
- 30"x30"x 6" Cincinnati, 1 hd., latest.
- 30"x30"x 6" Gray, 2 heads.
- 30"x30"x 6" Gray, 1 head.

HORIZONTAL BORING AND DRILLING MCHS.—"Knee Type"

- 21" bar, Bement Miles.
- 48" bar, Niles, 64" swing, power raise to table.
- 46" bar, B.-M., 62" sw., pwr. raise.
- 44" bar, B.-M., 62" sw., pwr. raise.
- 42" bar, Bement, power raise.

SLOTTERS

- 24" Niles-Bement-Pond (like new), complete with motor.
- 18" Putnam, motor drive.
- 14" Sellers.

RADIAL DRILLS

- 4' Fosdick, plain.
- 4' Carlton, speed box.
- 3' Carlton, speedy-sensitive.
- 3' Fosdick, plain.
- 24' Carlton, speed box.

BENDING ROLLS

- 10' 2" McCabe drop-end, balance bar type (motor or belt drive).

GEAR CUTTERS

- 11" Gleason bevel gear shaper.
- 22" Gleason, bevel gear.
- 30" Gould & E., spur and bevel.
- 36" Fellows gear shaper.

MILLING MACHINES

- No. 3B Milwaukee universal.
- No. 5 B. & S. vert., circular attach.
- No. 2 Cincinnati, vertical.
- No. 3 Cin'ti, plain, table 45x12".
- No. 22 Becker Brainerd, tbl. 48x14".
- Newton, 60x12" horizontal.
- No. 5 Hendey, q. c., Mfrs. style.

PUNCHES AND SHEARS

- 60" No. 6 Hilles & Jones horizontal, arranged for motor drive.
- 50" New McCabe.
- No. 3 Mesta, grd. alligator, m. d.
- 18" L. & A. guillotine.
- 36" No. 1 Long & Allstatter, dbl. end.

PRESSES

- No. 74 Bliss, trimming.
- No. 76 Bliss, trimming.

GRINDERS

- Bridgeport, 60x12", takes 36" bet. centers, Plain Roll Grinder.
- Landis, univ., 10" sw. takes 30" cent.
- Iroquois univ., 12" sw., 36" centers.

SHAPERS

- 28" Smith & Mills, single pulley drv.
- 24" Gould & Eberhardt.
- 16" Smith & Mills plain.

PIPE MACHINES

- 12" Curtis & Curtis.
- 10" Saunders, motor drive.

HAMMERS

- 40,000 lb. Chambersburg, dbl. frame, steam.
- 24,000 lb. N. B. Pond, dbl. frame, atm.
- 6000 lb. N. B. Pond, dbl. frame, steam.
- 4000 lb. Chambersburg, steam drop.
- 3000 lb. Erie, steam drop.
- 2700 lb. N. B. Pond, double frame, forging.
- 2500 lb. Chambersburg, steam drop.
- 2000 lb. Chambersburg, dbl. frame, forging.
- 1500 lb. Chambersburg, steam drop.
- 1100 lb. Bement, single frame.
- 1000 lb. Toledo, friction board drop.
- 200 lb. Bradley upright.
- 100 lb. Bradley, compact.

TESTING MACHINES

- 100,000 lb. Tinius-Olson tensile stnht.
- 100,000 lb. Riehle Bros. tensile stnht.

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J. J. McCabe Lathe & Machinery Corp'n
ROOMS 1805-10, 149 BROADWAY, NEW YORK

Grand Rapids Specials

Broaching machine, No. 4 Burr.
Broaching machine, No. 2 J. N.
LaPointe.

Compressor, 6x6 Curtis, dbl. cyl.
Cut-off mch., No. 4 Nutter-B.
Drill, 6-sp. 14" Rockford gang.
Grinder, No. 6 Bryant, chuck'g.
Hack saw, No. 7 Racine.
Hammer, H. C. Smith auto.
Lathe, 12" Hendey, tool room.
Lathe, 9x21½ Sundstrand Mfg.
Lathe, 9x12 Porter-Cable.
Lathe, 16x7 Oliver, q. c. g.
Lathe, 16x8 Bradford, q. c. g.
Miller, No. 3-H Becker vert.
Miller, 4" P. & W. spline.
Planer, 30"x30"x8" Pond.

Press, No. 34 Consolidated, arch.
Press, No. 164 Consolidated.
Radial drill, 3' Dresen.
Radial drill, 3' Fostick.
Riveter, ½" Shuster.
Sand blast, Type A-6 Pangborn.
Scrap compress, No. 10 Economy standard.
Shear, squaring, 96" Ohl, 16 ga.
Shear, 10' Bertsch, 11 gauge.
Turret lathe, 3x36, J. & L.
Turret lathe, 2x24, J. & L.
Turret lathe, No. 3 B & O.
Turret lathe, No. 5 Foster.
Turret lathe, 14" Warner & S.
Wire weaving mch., S. & K.

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"Everything in Shop Equipment"

Grand Rapids, Mich.

MILLING MACHINES—New

- 3—No. 1½ Rockford univ., cone type, cap. 25x7½x18.
- 2—No. 2½ Rockford univ., cone type, cap. 34x9x18.
- 1—No. 2½ Rockford univ., high pwr., grd. sgl. pulley dr., cap 24x9x18.
- 2—No. 1½ American plain and universal, cone type, cap. 25x9x19.
- 1—No. 6 Bickett vertical Mill and Profiler.

MILLING MACHINES—Used

- 1—No. 1 Cincinnati plain, m. d.
- 1—No. 2 Becker plain, m. d.
- 1—No. 4 Cincinnati univ., m. d.
- 6—No. 32 Kempsmith, Lincoln.
- 6—P. & W. 12" Auto. Mills.
- 1—Ingersoll slab, 20"x20"x8'.
- 1—Nos. 1 & 2 Newton keyseat mills, m. d.
- 3—No. 3½ Fox, power and hand, table 7x27½'.

MISCELLANEOUS

- 3—16"x8" Sidney Lathes, q. c., d. b. g.
- 1—37" N les Boring Mill, 2 heads
- 1—50" Sellers Car Wheel Borer.
- 1—52" Bertsch Multiple Punch.
- 3—Quickwork Rotary Shear, cap. up to 1".
- 2—Hendey Shavers, 15" and 20".
- 2—Thompson Universal Grinders 10x36".
- 12—Gisholts, 12" and 24" Turret Lathes.
- 4—Multiple Drills, 10 to 24 spindles.
- 14—Screw Machines, ½ to 3½" cap.
- 4—Radial Drills, 2½, 4' and 5' plain and universal.
- 5—No. 3 Oakley Universal Grinder, 10x20.
- 1—Used No. 3 Sidney Inclined Press, weight 2600 lbs.
- 1—Used 10x24" Landis Plain Grinder.

Money back if not satisfied. Over 1,000 Machines in stock.

Wayne Machinery Co., Ft. Wayne, Ind.

Harris Brothers Co.

1475 W. 35th St., Chicago, Ill.

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GRINDERS AND SHAFT TURNING LATHES

Diamond 6"x45" Plain External Cylindrical Grinder.
Brown & Sharpe 8"x16" Universal External Cylindrical Grinder.
Landis 16x60 Universal External Grinder.
Fitchburg 12"x36" Plain External Cylindrical Grinder.

Yankee 11" Twist Drill Grinder.
Yankee 31" Twist Drill Grinder, Motor Drive 220 D. C.
New Britain Drop Head Polishing and Buffing Stands, Spdl. 14" dia. x 35" long—can be used as Emery Grinders. (50 machines in stock).
Single Spdl. Valve Seat Grinders (4).

PUNCH PRESSES

Ferracute D. G. G. No. 55 Straight Sided, Single Action, Dbl. Back Grd. Punch Press, Friction Clutch Drive. Distance between Uprights 25"; Area of Bed, R to L 24", F to B 31"; Stroke of Slide 16"; Ram Pressure 70 tons. Weight about 16,000 lbs. Condition 95% new.

Ferracute D. G. G. No. 56—same. Distance between Uprights, 32"; Area of Bed, R to L 30"; F to B 36"; Stroke of Slide, 16"; Ram Pressure 100 tons. Weight about 22,000 lbs. Condition 95% new.

Ferracute No. E57 Toggle or Embossing D. G. G. Distance between Uprights 38"; Area of Bed, 36x36; Stroke, 24"; Ram Pressure 1500 tons. Weight (each) about 140,000 lbs. (2 machines). Condition 99% new.

Crosby No. 3 Open Back Punch Press, (Not inclinable). Stroke 24"; Area of Bed 13"x20"; Center of Slide to column 64"; Weight about 3,000 lbs. Condition 85% new.

ENGINE LATHES, TRIPLE GRD., SCREW CUTTING

96x37 Fifeild, 27' centers
68x40 Pond, 30' centers
60x40 Fifeild, 30' centers
with 2 carriages on bed, with compound rests, hollow spindle. (2 Machines). Nearly new.

36x32 Amer. Tool Wks., 25' centers with 2 carriages on bed, with compound rests, have power angular feed, quick change. Nearly new. (3 Machines).

36x32 LeBlond, 25' centers with carriages on bed, compound rests, taper attachment, quick change. Nearly new. (2 Mchs.)

ENGINE LATHES (NOT SCREW CUTTING) PLAIN TURNING

36x27 Niles-Bement-P., 21' centers Heavy duty, all geared head.

36x33 Niles-Bement-P., 27' centers Heavy duty, all geared head.

28" Davis Furber, Pulley Turning.

18x8 Fulton Plain Turning, B. G.
48" Niles Double Head Car Wheel Turning Lathe, with 2 carriages.

MILLING MACHINES

Ingersoll 24"x24"x12" Table Horizontal Slab Milling Machines with INCLINED ADJUSTABLE RAIL—(Brand New) (6 machines) —Weight about 25,000 lbs.

HENDEY No. 24 Milling Machines Table 11"x30" (Automatic Feed 20") 20 Machines.

HENDEY No. 4 Milling Machines Table 9"x24" (Automatic Fd. 20") 250 Machines.

BECKER No. 7 H. Milling Machines, Table 9"x29", (Automatic Feed 20") 250 Machines.

PEDRICK & AYER No. 3 Univ. Milling Mchs. (Automatic Feeds 34"x10"x18"). Table 52"x14".

Whitney No. 6 Hand Milling Mchs. Table 20"x4" (Feeds 16"x8"x13") 10 Machines.

SMITH No. 6 Hand, Table 20"x4" (Feeds 16"x8"x13") 20 Machines.

VERTICAL MILLING MACHINES

BECKER No. 5 C Latest Improved Model Single Pulley Drive (All Geared Speeds) Table 56x14" (Auto. Fds. 54x16x14") 2 Machines

BECKER No. 5 Table 48"x13" (Auto. Feeds 40"x15"x12").

NEWTON No. 1 with Automatic

Revolving Rotary Table 22" dia. (Auto. Fds. 20"x12"x12") Swings work 33" dia

BROWN & SHARPE No. 3 Table 60"x16" (Auto. Fds. 34"x16"x14").

GARVIN No. 22 Table 40"x9" (Feeds 21"x8"x18").

Write for a free copy of Bulletin No. 205 describing our complete stocks of Machine Tools.

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VERTICAL BORING MILLS

120" Niles, 2 swivel heads.
80" Niles-Bement-Pond, 2 sw. hds.
72" Niles, 2 swivel heads.
64" Poole, 2 swivel heads, thread cutting.
44" Niles, 1 swivel hd., 1 tur. head.
42" Putnam carwheel, hub facing attachment.
32" Rogers, swivel turret head, universal jaws.

HORIZONTAL BORING MILLS

Bement cylinder, 8" bar.
Barrett No. 2 cylinder, 5" bar.
Heaman & Smith No. 2 floor boring, drill and milling machine, 4" bar.
Lucas "Precision" boring, drilling and milling machine, 3" bar.
Niles boring drilling mche., 4" bar.
Betts boring drilling mche., 5" bar.
Bement bor. drilling mche., 3" bar.
Newark bor. drilling mche., 3" bar.
Bement bor. drilling mche., 3" bar.
Bement bor. drilling mche., 2" bar.
Barnes drill'g tap. mch., 2 3/16" bar.
Underwood type 4 1/2" bar. floor plate 8'x9'.

LATHES

21' triple geared face plate drive Pit Lathe for slotting, facing & boring.
60"x30" Fifield, face plate dr., 22" cent.
62"x22" Putnam, triple grd., internal face plate drive, 13' centers.
62" Pulley, triple grd., face plate dr.
36"x20" Putnam, triple geared, face plate drive.
30"x12" Niles-Bement-Pond, geared head, heavy duty, quick change.
28"—48"x12 Harrington Gap Lathe.
24"x14" Prentice, geared friction head, quick change.

PUNCHES, SHEARS, ETC.

Pels Beam Shear, cap. 15" I beams.
Quickwork Rotary Shear, 46" throat, 1" capacity.
Stoll 10' Squar'g Shear, No. 16 ga.
Stoll 11' Squar'g Shear, No. 16 gauge.

PUNCHES, SHEARS, Etc.—Cont.

"B"—Long & Allstatter Single End Shear, capacity 24" round.
No. 121 Toledo Boiler Maker Punching & Riveting Machine.
No. 6 Beatty S. E. Punch, 25" Throat, double gap.
No. 7 Beatty S. E. Punch 15" throat.
1" Acme Hot Nut Punching Mche.

PRESSES

No. 4 A Bliss, adjustable bed, 4" stroke, weight 5800 lbs.
DG 5 Ferracute geared, 3" stroke weight 8700 lbs.
No. 604 Bliss, rack and pinion reducing, adjustable stroke 4" to 42", weight 12 500 lbs. (3).
No. 666 Toledo knuckle joint, 2 1/2" stroke, 1000 tons pressure, weight 80,000 lbs. (2).
No. 657 Toledo rack and pinion reducing adjustable stroke 5" to 40".
No. 856 Toledo rack and pinion reducing, adjust. stroke, 5" to 36" (2).
No. 24 E. J. Manville double acting, stroke slide 4", stroke plunger 1 1/2".
No. 104 V. & O. dbl. acting, stroke slide 1", stroke plunger 1 1/2" (5).
NEW No. 34 Excelsior 225 ton Hydraulic Tire Applying Press (2).

PLANERS

96"x96"x37' Planer, 4 heads.
14" Hilles & Jones Plate Planer.
72"x72"x14" Pond, 4 heads.
72"x70"x14" Sellers, 3 heads.
48"x48"x14" Patch, 4 hds., latest type.
42"x42"x14" Pond, 4 heads.
32"x36"x20" Woodward Powell, 2 hds.
36"x36"x12" Bickett, hvy. duty, 2 hds.
36"x36"x12" Bickett, hvy. duty, 1 hd.
16"x16"x42" Walter Bros., 1 head.
Two 28" Newton Pl. index centers.

NEW DOUBLE LEATHER BELTING

5" center stock.....\$.84 per ft.
10" center stock.....1.68 per ft.

New York Machinery Exchange
50 Church Street, NEW YORK

New and Used Machinery

BORING MILLS

84" Betts, 2 std. hds., with motors.
72" Pond, 2 std. hds., 60x6" table.
61" Bullard Maxi-Mill, 2 heads.
60" Hilles & Jones, swivel hd., b. g.
36" Bullard New Era ver. tur. l. (2).
24" Bullard New Era ver. tur. lathe.
32" Rogers, 1 hd., q. c. fd., thrdg. at.
48" Gisholt vert., 1 std. turret head.
Detrick & H. hor. fl. type, 5" spdl.
Niles hor. 4 1/2" spindle, floor type.

LATHES

60x20 American, triple gr., c. r.
60x18 Johnson, grd. hd., motor dr.
48x26 Putnam, grd. hd., with mtrs. (2).
42x26 Standard roll turning.
36x30 LeBlond, triple gr., q. c. g., h. s.
36x24 Putnam, grd. hd., with motors.
36x18 Putnam, grd. hd., with motors.
36x14 Putnam, grd. hd., motors (4).
30x12 American, grd. hd., q. c. g., h. s.
24x 8 Bridgetford, d. b. g., q. c. g. feed.
20x14 Johnson, b. g., p. c. f., 8475.
18x10 Hendey, b. g., q. c. g., h. s.

TURRET LATHES AND AUTOMATICS

24" Gisholt, 8 1/2" h. s., rpd. pr. trav. (4).
21" Gisholt 3 1/2" h. s., rpd. pr. trav.
3x28" Jones & L., ali. hd., roller fd.
2" Cleveland auto., extra equipment, bargain (2).

MILLING MACHINES

Nos. 2, 3 & 4 Cincinnati universal.
Nos. 3 & 4 Cincinnati plain.
Nos. 1 1/2 & 3A B. & S. universal.
Nos. 2B & 3B Milwaukee universal.
No. 5 Garvin slab, vertical spindle.
No. 6 Becker vert., rotary table (4).
36"x24"x8" Ingersoll, planer type, 1 vert., 2 hor. spdls., adjustable rail.

DRILL PRESSES

7' Prentice pl. rad., t. a., mtr. dr. (2).
4' Bickford plain radial.
4' Mueller, plain radial (2) new.
No. 2 Colburn heavy duty, new.
36" Hoefer, sliding head, b. g., automatic feed, new.
24" Hoefer, slid. hd., b. g., pwr. fd.
20" Cincinnati, sliding head, b. g.
2-spindle Avey, ball bearing.
No. 30 Natco, 19 spdl., 25" bolt circle.
Fox, type D22, 16 sp., 12x18 rt. hd. new.

PLANERS

72x72x20 Cin., 4 hds., with motors.
72x72x20 N-B-P., 4 hds., with motors.

PLANERS—Continued.

60x60x15 N-B-P., 4 hds., with motors.
48x48x28 Cin., 2 hds. on rail, new.
48x48x24 N-B-P., 4 std. hds., motors.
48x48x12 N-B-P., 2 hds., on rail.
36x36x15 N-B-P., 4 hds., with motors.
36x36x14 D. & H. open, 1 rail, 1 side hd.
36x36x12 N-B-P., 4 hds., box tbl. (2).
30x30x 8 D. & H. open, 1 rail, 1 side hd.
24x24x 6 Cincinnati tool room.
12x12x26 Hewes & Phillips, 4 swivel heads, bargain.

SLOTTERS AND SHAPERS

24 3/8 & 36" N-B-P., std. slotters (2ea.).
21" Dill slotter.
18" Newton slotter, 42" table (3).
10x12" Dill slotter, b. g.
26" Stockbridge c. shaper, b. g.
24" Steptoe c. shaper, b. g. (2) new.
20" Steptoe c. shaper, b. g. (3) new.
16" Steptoe c. shaper, b. g. (2) new.
15" Potter & Johnston univ. shaper.
28" Niles trav. hd., 2 tbls., vise, c. s.

GEAR CUTTING MCHES.

12" Standard spur, double head.
48" Gould & Eberhardt spur (2).
36" Fellows, No. 612.
84" Gould & E. gear hobber.
24x8 S. & S. auto. gear hobbors, (2).
36" Brown & Sharpe spur, No. 4.

GRINDERS

80" Bridgeport cup whl., auto. knife.
36x14" Pratt & W. vertical surface.
No. 2 Brown & Sharpe surface.
No. 1 Brown & Sharpe univ. cyl.
No. 11 Brown & Sharpe univ. cyl.
Sellers universal tool.
Sellers standard twist drill.
Heald twist drill.
20" Blount wet tool.

MISCELLANEOUS

9x9 Peerless h. s. metal saw.
6x6 Peerless h. s. metal saw.
6x6 Peerless h. s. metal saws, (2) new.
No. 3 J. N. LaPointe broach'g mchs.
No. 2 J. N. LaPointe broach'g mchs.
1500-ton Mesta hydraulic steam forging press.
1200-ton United hydraulic steam forging press.
500-ton Bethlehem 4-column press.
200-ton Bethlehem 4-column press.
35' Hilles & Jones plate planer.
3000 emery wheels, all sizes, grades, shapes, one-fifth present prices.

Above shows only part of stock; send for complete list

**EASTERN
& EQUIPMENT**



**MACHINERY
COMPANY.**

COMMERCIAL TRUST

BLDG. PHILADELPHIA, PA.

Going Out of Business

By Order of Court

Partial List of Machines On Hand

Prices Very Much Reduced

BORING MILLS

- | | |
|---|---|
| 76" Betts, heavy modern. | 3" Betts horizontal, knee type. |
| 60" Bickford, standard, 2 heads, low price. | No. 31 Rochester, horiz., floor type, motor drive, 3/38" bar. |
| 9-24" Bullard vertical turret. | 36" Bullard vert. turret. |

DRILLS

- | | |
|-------------------------------------|---------------------------------------|
| 8' Niles Plain Radial. | 3 and 4 spindle Barnes gang. |
| 6' Bickford, Semi-Universal Radial. | 2 spindle Foote-Burt, hvy, rail type. |
| 4' Gang, gear box drive. | 6 spindle Rockford, automatic feed. |
| 6 spindle Bausch, 1" capacity. | 6 spindle Allen sensitive. |
| 24" Barnes, all geared. | |

LATHES

- | | |
|--------------------------------------|--|
| 52"x22" New Haven, belt drive. | 30"x12" Johnson, t. g., low price. |
| 48"x30" New Haven, very cheap. | 26"x12" Putnam, q. c., d. b. g. |
| 38"x21" Double end lathe, t. g. | 20"x12" Hamilton, rais'g blocks to 30. |
| 32"x14" Fitchburg, 3 s. c., d. b. g. | 20"x 8" Lodge & Shipley geared. |
| 28"x14" Fitchburg, 3 s. c., d. b. g. | 18"x 8" Morris, q. c., d. b. g. |

MILLING MACHINES

- | | |
|----------------------------------|--------------------------------------|
| No. 5C Becker Verticals, new. | No. 25 Becker plain. |
| No. 3 LeBlond, plain, high duty. | No. 2 Hendey Norton plain. |
| No. 2 Kempsmith universal. | No. 14 Hendey Norton universal. |
| 50"x8" Ingersoll slab. | Garvin No. 15 vertical, planer type. |

PLANERS

- | | |
|--|---|
| 84"x84"x13" Sellers, 3 hds., belt dr. | 48"x48"x16" Bement-Miles, 4 heads, belt driven. |
| 48"x48"x14" Powell, 4 heads, reversible motor drive, complete with electrical equipment. | 36"x36"x18" Pease, 2 heads. |
| 36"x36"x12" Niles-B.-P., 3 heads. | 30"x30"x10" Flather, 2 hds., belt dr. |
| | 30"x30"x 6" Gray, 3 heads. |

SHAPERS

- | | |
|-----------------------|-------------|
| 34" Juengst geared. | 20" Hendey. |
| 16" Ohio back geared. | 14" Hendey. |

SLOTTERS

- | | |
|-----------------------|------------------------------|
| 15"-18" Dill, new. | 30" Bullard draw-cut. |
| 16" Newton, like new. | 16" New Haven. |
| 12" Betts. | All slotters very low price. |

MISCELLANEOUS

- | | |
|--|------------------------------------|
| No. 26 Buffalo Armor Plate Shear, 4" cap., new, cheap. | 60" Springfield Face Grinder, new. |
| 2 1/2 to 8" Curtis Pipe Machine. | 20" Greenlee Flat Turret Lathes. |

Write for Catalogue

Graves Machinery Exchange

OFFICE—WAREHOUSE and MACHINE SHOPS,
Johnson Ave. and Monitor St., Jersey City, N. J.

Back to Lower Prices

WE CONVERT ANY NEW OR USED CONE DRIVEN TOOL INTO AN ALL-GEARED MOTOR DRIVE QUICKLY AT REASONABLE COST. FULL DETAILS AND PRICE ON REQUEST.

LATHES

9" to 13" Barnes, h. s., cp. r., new.
10"x 5' Summit, nearly new (2).
13-15-16 and 18 O. & S., h.s.c.r., new.
16"x 6' Monarch, dbl. bk. gr.

18"x 8' Monarch, q. c., d. b. g.
20"x10' Prentice, taper.
25"x14' Schumacher & Boye.
8"x60' Fitchburg L-Swing.

TURRET LATHES and SCREW MACHINES

24" Steinfle, 6 1/2" hol. spdl., grd. hd.
1 1/2" Tilted turret hand screw mche.
1" and 1 1/2" Mulholland.

2x24 & 3x36 J. & L., dbl. equipment.
No. 2 Warner & Swasey hol. hex.
Nos. 52 and 56 National Acme.

SHAPERS

14" Niles, traveling head.
14" Smith & Mills, crank.
16" & 24" Barker, b. g. crank.

24" Walcott, geared.
20" Smith & Mills, geared.
16" Springfield, crank, back grd.

PLANERS

24x24x 6' Gray.
24x24x 6' Pease.
36"x36"x12' Niles.
44x44x12' Pond, 4 heads.
48x48x16' Bement-Miles, 2 heads.

54x54x16' Sellers, 4 heads.
60x60x17' Betts, 2 heads.
60x60x20' Sellers, 4 heads.
66x66x20' New Haven, 2 heads.
84x84x32' Putnam, 4 heads.

PRESSES

No. 18 Bliss, open back inclinable.
No. 35 Niagara, Stiles type, (2).

3-A, 4-A, 5-A and 6-A Willard.
Emco, bench, for radio parts.

DRILLS and RADIALS

3' Morris plain, gear box drive.
3 1/2' Canedy-Otto plain, new.
Sensitive 1, 2, 3, 4 and 6 spindle.

1 1/2" Avey high speed bench, (5).
24", 26", 28" and 32", sliding head.
25" & 26" Barnes Camel Back.

**New Standard Makes 20" Drills, each \$109.50
Motors, 1 to 50 H. P., 3 ph., 220 v., G. E., New**

MILLING MACHINES

No. 25 Becker plain, (3).
Ames Lincoln type, 10"x40" table.
No. 1 Kempsmith universal.
No. 3 Brainard, 30x7 table.

No. 1 1/2 B & S. plain.
No. 2 H Brown & Sharpe plain.
Briggs type "A" high duty, 24x8 table.
No. 32 Kempsmith Lincoln type, (3).

GRINDERS

Nos. 1, 3 & 78 W. & M. surface.
10x24 Norton plain.
Capital, internal, practically new.
No. 2 W. & P. 10x30 universal.

12x36 Cincinnati universal.
36" and 66" Yates plate.
6x32 Norton, plain.
12x48 Landis, plain.

MISCELLANEOUS

Band saws, metal, Klemm, (3).
Bending rolls, 8", for 3/4" plate.
Boring mill, 12", 2 swivel heads.
Boring mill, Bullard 34" turret hd.
Cold saw, Burr, 3" capacity.
Compressors, 9x8 and 12x10, new.
Etching machine.
Gear cutter, Whiton 36"x9 1/2" face.
Gear millers, Bilton No. 1, (5).
Hammers, 40 lb. Bradley, helve, (2).
Hammer, 150 lb. Standard drop.
Oil groover, Garvin, nearly new.

Oil separator, Springfield.
Pipe machines, 2", 4", 6" & 12".
Pumps, Gould triplex, 6 1/2"x8" & 7x8".
Punch & shear 1/2 by 1/4, 10" throat.
Pyrometer, Brown 29000, 3-way.
Riveter, high speed, 3/4" capacity.
Sceleroscopes, Shore, (2).
Shear, 5' Robinson, for 10 gauge.
Shear, No. 20 Quickwork, 36" throat.
Shear, 52" Niagara, 18 gauge.
Tapping mche., 3/8" Rickert-Shafer.

THE OSBORNE & SEXTON
MACHINERY COMPANY
COLUMBUS OHIO

WE ARE NOT HOLDING these tools for what they are actually worth, but are turning them promptly into money, at lowest prices, directly from the plants where they had been used.

GREAT BIG LATHE—Niles-Bement-Pond heavy triple geared, 120" swing over bed, 88" over carriage, 40" bed, turns 30' between centers; belt driven from 2 motors (no motors included), one for main drive, another for driving carriage rapid traverse.

GREAT BIG HORIZONTAL BORING MACHINE—Boring bar 12" diameter, 10' long; accurate; powerful; belt driven.

GREAT BIG SAW—No. 3 Ryerson High Speed Friction Saw, complete with 45-80 h. p. special 230 v., d. c. motor, running arm, 1800 r. p. m., and a small 230 v., d. c. motor for operating feed mechanism. Capacity, 20" 65-lb. beams or equivalent.

BIG LATHES

90"x20" Putnam, triple-geared.
60"x28" Putnam, triple-geared.
52"x20" New Haven, triple-geared.
48"x16" Niles-B.-P., with motor.
48"x16" Lodge & S., sgl. pulley dr.
42"x17" Putnam, single pulley drive.
36"x14" Putnam, tr. grd., taper att.
30"x30" Niles-B.-P., motor driven, carriage motor control.

BIG PLANERS

144"x120"x30" N.-B.-P., mtr. dr., 4 hds.
94"x84"x13" Sellers, arranged for motor drive, 3 heads.
72"x72"x28" Niles Tool Wks., 4 hds.
60"x80"x12" G. A. Gray, 4 heads.
48"x48"x16" Bement-Miles, 4 heads.
42"x42"x12" Pond, 2 heads.
36"x36"x18" Gray, 2 heads.
36"x36"x12" Niles-Bement-P., 3 hds.

BIG GRINDER

18"x36" B. & S., ar'ged for mtr. dr.

BIG PUNCHES & SHEARS

50" throat Cleveland sgl. end interchangeable, cap. 1½"x1" w. 30,000 lbs.
98" throat, Long & A Multiple Punch, cap. Sixty-four ¾" holes in ¾" plate, weight 43,000 lbs.
98" between housings, Morgan Plate Shear, cap. 1" thick, wt. 80,000 lbs.
91" bet. housings, Garrison Plate Shear, capacity ¾" plate.
156" between housings, Mesta Plate Shear, cap. ¾" plate, wt. 150,000 lbs.

McCABE "2-IN-1" DBL. SPDL. LATHES, HEAVY PATTERN

26/48" swing, 12' bed, 6' centers, Geared Plate.
26/48" swing, 16' bed, 10' centers, Plain Plate.
26/48" swing, 26' bed, 20' centers, Geared Plate.
26/48" swing, 30' bed, 24' centers, Plain Plate.

MILLING MACHINES

Universal—No. 2 H'n'ti sgl. pul. dr.
Universal—No. 2A Hendey single pulley drive.
Plain—No. 2B B. & S., sgl. pul. dr.
Planer Type—30"x12" Ingersoll Slab, with vertical head.

RADIAL DRILLS

8' arm, Pond, belt driven.
7' arm, Pond, belt driven.
6' arm, Bickford semi-univ., spd. box.
5' arm, Morris, plain, speed box.

UPRIGHT BORING MILLS

24" swing, Bullard New Era, vertical turret, side head.
26" swing, Bullard, 2 heads.
42" swing, Bullard, 2 heads.
61" swing, Bullard Maxi-Mill, 3 hds.
72" swing, Betts, 2 heads.
7/10" swing, Betts, 2 heads.
8' swing, Niles, 2 heads.
10' swing, Niles, 2 heads.

UPRIGHT DRILLS

25" swing, Snyder, sliding head.
36" swing, Snyder, sliding head.
35" swing, Snyder, sliding head.

SHAPERS

16" stroke Smith & Mills, spd. box.
20" stroke Smith & Mills, spd. box.
20" stroke Gould & E., back geared.

LATHES

16"x 6" Pratt & W., tool room.
17"x 8" LeBlond, heavy duty, q. c.
18"x10" Am. Tool Works, q. c.
20"x14" Hendey, quick change.
24"x16" Reed.
26"x26" Pratt & Whitney.
28"x21" Schumacher & Boye.
30"x16" Reed.
30"x24" Pond.
34"x18" Pond.

MISCELLANEOUS

Turret Lathe—Steinle Geared Hd., 24" swing, 6" hole.
Planer, 24"x6" Gray, 1 head.
Slotter—24" stroke Bement
Drop Hammer—1200 lb., Billings & Spencer.
Drop Hammer—1500 lb., Billings & Spencer.
Straightening Rolls—7' between housings, Cleveland.
Straightening Rolls—6' between housings, Hilles & Jones.
Horizontal Boring Machine, 24" bar, Lucas.
Broaching mche., No. 3A Lapointe.
Surface Grinder, No. 2 Brown & Sharpe, Magnetic Chuck.

McCabe & Sheeran Machinery Corporation
50 Church Street, NEW YORK CITY

ReMANUFACTURED - (ORIGINATED BY US) - MACHINE TOOLS

REG. U. S. PAT. OFF.

EVERY ReMANUFACTURED MACHINE TOOL in our place represents an unusual BARGAIN. A card will bring our latest GREEN LIST containing 2000 machine tools. We welcome inspection of our plant and our process.

LATHES.

- 1-45"x24" Pond, triple gd.
- 3-36"x42" LeBlond, q. c. g.
- 15-36"x30" Pittsburgh, q. c. g.
- 1-36"x19" Johnson, triple geared.
- 6-30"x11" American, geared head.
- 15-each 26"x9", 10", 12", 14", 16", 18" and 20" Bridgeford, q. c. g.
- 3-20"x10" Lodge & Shipley, q. c. g.
- 89-20"x 8", 12" & 16" Amer., q. c. g.
- 1-18"x 8" Boye & Emmes, q. c. g.
- 1-18"x 8" Lodge & Shipley, q. c. g.
- 3-18"x 9" Lehmann, q. c. g.
- 7-17"x 6" LeBlond mig. auto.
- 2-16"x 6" Bradford, q. c. g.
- 1-15"x 6" Sidney, q. c. g.
- 1-14"x 6" Bradford.
- 1-13"x 5" Willard.

DRILLING MACHINES.

- 1-each 3", 3½", 4" and 6" Western Radials.
- 2-No. 11 Pratt & Whitney mult. sp.
- 2-No. 11 Natco multiple spindle.
- 21-3, 4 & 6 spindle Allen, b. b.
- 1 each 1 & 2 spdl. Henry & Wright.
- 6-20" Barnes plain and b. g.
- 6-20" Rockford plain and b. g.
- 6-22" Barnes, sliding head.
- 1-26" Barnes "Camel Back".
- 1-25" Cincinnati, tapp. att.
- 1-28" Cincinnati.
- 1-34" Barnes.
- 1-36" Cincinnati, tapp. att.
- 1-40" Cincinnati.
- 1-No. 1 Baker.

GEAR CUTTERS & HOBBSERS.

- 3-18" Gould & Eberhardt.
- 13-No. 1 Farwell.
- 2-Nos. 3-26 & 3-36 B. & S.
- 6-No. 6 Fellows.
- 1-No. 6 12 Fellows.
- 1-36" Gleason bevel.

CRANK SHAPERS.

- 1-15" Potter & Johnston.
- 3-each 16" and 20" Steptoe, b. g.
- 3-ea. 16", 20" & 24" Walcott, b. g.

VERTICAL BORING MILLS.

- 15-24" Bullard New Era vertical.
- 1-30" Gisholt vertical.
- 1-36" Bullard vertical.
- 1-42" Gisholt vertical.
- 1-37" 44" Colburn vertical.
- 1-48" Colburn vertical.
- 1-60" Bullard vertical.
- 1-72" Betts vertical.
- 3-72" Cincinnati.
- 1-10" Niles vertical.
- 1-No. 3-A universal horizontal.
- 1-No. 5 Defiance horizontal.
- 3-Foote-Burt horizontal.
- 1-Cleveland horizontal.

MILLERS.

- 2-No. 1 Brown & Sharpe plain.
- 1-No. 1 Brown & Sharpe univ.
- 1-No. 1½ Cincinnati univ.
- 15-Nos. 2 & 3 Kempnath plain.
- 2-No. 2A Brown & Sharpe univ.
- 4-No. 4 Cincinnati plain.
- 1-No. 4 Cint. univ. hi-power.
- 1-No. 3 Brown & Sharpe vert.
- 1-No. 2½ Milwaukee vert.
- 1-No. 5 Becker vert.

PLANERS.

- 1-96"x72"x20" Bement, 4 heads.
- 1-60"x46"x10" Gray, spiral geared.
- 1-36"x36"x10" Beckett.
- 1-30"x30"x10" Woodward & P.
- 1-24"x24"x12" Whitcomb.

TURRET LATHES.

- 1-3½" Foster.
- 2-3x36" Jones & Lamson.
- 1-2" Brown & Sharpe.
- 3-1½" Warner & Swasey.
- 5-1½" Foster No. 3.
- 5-1" Foster No. 2.
- 8-1" Warner & Swasey.
- 8-1" Pratt & Whitney.
- 4-24" Gisholts.

GRINDERS.

- 46-4"x20" to 20"x36" Landis, Brown & Sharpe, Cincinnati, Modern and Norton plain and universal.

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HILL, CLARKE & CO. OF CHICAGO
649 W. WASHINGTON BLVD., CHICAGO, ILL.

I Pay 500% Annual Dividends

You Can Prove It Yourself

*Built Since 1887
Better now than ever*



I am the

TOWSLEY TRUCK

I am made in all
styles and sizes
to meet every
requirement.

TAKE A PENCIL and do a little simple figuring. Make your own estimate of how much labor is saved each time a truck is used. Multiply this by the approximate number of times it is employed per day, and this, again, by the labor cost per hour, and you can easily estimate the saving for a month or a year.

EFFICIENCY ENGINEERS have figured this out with great care, and they say that the average truck pays for itself every two or three months, *earning about 500% a year.*

I, the Towsley Truck,

—am such a good truck, because my makers believe that anything which earns 500% a year deserves to be well made. They believe it is economy to build me the best they know how—not to sell at a price, but to last the longest, to give the best service, and to earn the largest dividends. And that is why I have been adopted in so many plants as their standard truck equipment.

*Write to my makers. Tell them your requirements.
Let them help you make money. They are the—*

John T. Towsley Mfg. Co.
1036 Woodrow St., Cincinnati, Ohio

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Air Guns

Powell Co., Wm., Cincinnati

Angle Plates

Germanow-Simon Mch. Wks., Rochester, N.Y.

Arbors, Solid

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Automatics

National Acme Company, Cleveland
New Britain Machine Co., New Britain, Conn.

Balancing Ways

Anderson Bros. Mfg. Co., Rockford, Ill.

Ball Bearings

Abbott Ball Co., Hartford, Conn.

Balls, Brass, Bronze and Steel

Abbott Ball Co., Hartford, Conn.

Band Saw Machines, for Metal

Armstrong-Blum Mfg. Co., 341 N. Francisco
Av., Chicago

Barrels, Tumbling

Abbott Ball Co., Hartford, Conn.
Scully-Jones & Co., Ry. Exch. Bldg., Chicago

Bearings, Babbitted

Bunting Brass & Bronze Co., Toledo, O.
Johnson Bronze Co., New Castle, Pa.

Bench Legs, Steel

New Britain Mch. Co., New Britain, Conn.

Bending Machines, Hand and Power

Armstrong-Blum Mfg. Co., 341 N. Francisco
Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mch. Co., T. H. 417 E. 51st., N. Y.
Lourie Mfg. Co., Springfield, Ill.
Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia

Boring Bars

Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia

Boring Bars, Cylinder

Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia

Boring, Drilling and Milling Machines, Horizontal

Barnes Co., W. F. & John, Rockford, Ill.
Reaman & Smith Co., Providence, R. I.

Boring Machines, Horizontal

Avey Drilling Machine Co., Cincinnati
Pedrick Tool & Machine Co., Philadelphia

Bronze

Bunting Brass & Bronze Co., Toledo, O.
Johnson Bronze Co., New Castle, Pa.

Bushings, Brass and Bronze

Bunting Brass & Bronze Co., Toledo, O.
Johnson Bronze Co., New Castle, Pa.

Case Hardening Compound

Buchanan Chemical Co., C. G., Cincinnati

Castellating Machines

Craftsman Tool Co., Conneaut, O.

Casters for Trucks

Hamilton Caster & Mfg. Co., Hamilton, Ohio

Centers, Index

Carter & Hakes Mch. Co., W. Winsted, Conn.
Dickow Machinery Co., Fred C., 2105 W.
Lake St., Chicago
Pay & Scott, Dexter, Maine
Willard-Middletown Machine Co., Middle-
town, Ohio

Chains, Power Transmission

Cullman Wheel Co., 1344 Altgeld St., Chicago
Whitney Mfg. Co., Hartford, Conn.

Chasers

National Acme Co., Cleveland

Chucking Machines

New Britain Mch. Co., New Britain, Conn.

Chucks, Centering

McCrosky Tool Corporation, Meadville, Pa.

Chucks, Collet

Ney Co., J. M., Hartford, Conn.

Chucks, Drill

Jacobs Mfg. Co., Hartford, Conn.
McCrosky Tool Corporation, Meadville, Pa.
Scully-Jones & Co., Ry. Exch. Bldg., Chicago

Chucks, Drill and Tap

McCrosky Tool Corporation, Meadville, Pa.
Peter Bros. Mfg. Co., Algonquin, Ill.
Scully-Jones & Co., Ry. Exch. Bldg., Chicago

Chucks, Keyway Cutting

Scully-Jones & Co., Ry. Exch. Bldg., Chicago

Chucks, Magnetic

Heald Machine Co., Worcester, Mass.

Chucks, Oval

Prybil Machine Co., P., 512 W. 41st, N. Y.

Chucks, Wrenchless

Thomas Elevator Co., 31 S. Hoyne Ave.,
Chicago

Cold Saws

Burke Machine Tool Co., Conneaut, Ohio
Cochrane-Hly Co., Rochester, N. Y.
Peter Bros. Mfg. Co., Algonquin, Ill.

Collets, Lathe and Screw Machine

Morrison Machine Products, Inc.,
Rochester, N. Y.

Couplings, Flexible

Cooper Flexible Transmission Co., Inc.,
Brooklyn

Cranes, Portable

Candey-Otto Mfg. Co., Chicago Heights, Ill.
Canton Foundry & Mch. Co., Canton, Ohio

Crank Pin Turning Machine

Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia

Cutters, Adjustable

McCrosky Tool Corporation, Meadville, Pa.

Cutters, Keyseating

Scully-Jones & Co., Ry. Exch. Bldg., Chicago
Whitney Mfg. Co., Hartford, Conn.

Classified Finding Index

Cutters, Milling

Whitney Mfg., Co., Hartford, Conn.

Cutting-Off Machines

Elma Mfg. Co., Toledo, Ohio
Peter Bros. Mfg. Co., Algonquin, Ill.

Cylinder Boring Machines, Portable

Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia

Cylinder Grinders

Schmidt Co., B. L., Davenport, Iowa

Cylinder or Dome Facing Machines

Underwood Corp., H. B., Philadelphia

Detectors

Bennett Metal Treating Co., Elmwood, Conn.

Die Heads, Self-Opening

National Acme Company, Cleveland

Dies, Pipe Threading

Hignall & Keeler Mch. Wks., Edwardsville, Ill.

Dies, Screw and Thread Cutting

Greenfield Tap & Die Corp., Greenfield, Mass.
National Acme Company, Cleveland

Dies, Self-Opening Adjustable

Greenfield Tap & Die Corp., Greenfield, Mass.
Rickert-Shafer Co., Erie, Pa.

Drilling Machine Heads

Nelson-Blanch Mfg. Co., Detroit, Mich.
United States Drill Head Co., Cincinnati

Drilling Machines, Bench

Avey Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Burke Machine Tool Co., Connecticut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Reed Co., Francis, Worcester, Mass.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Multiple Spindle

Avey Drilling Machine Co., Cincinnati
National Acme Company, Cleveland
Reed Co., Francis, Worcester, Mass.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Post

Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Mueller Machine Tool Co., Cincinnati

Drilling Machines, Radial

Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Mueller Machine Tool Co., Cincinnati
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Sensitive

Avey Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Burke Machine Tool Co., Connecticut, Ohio
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Reed Co., Francis, Worcester, Mass.
Taylor & Fenn Co., Hartford, Conn.
U. S. Machine Tool Co., Cincinnati, O.
Wisconsin Electric Co., Racine, Wis.

Drilling, Milling and Boring Machines, Vertical

Aurora Tool Works, Aurora, Ind.

Drilling Machines, Vertical

Aurora Tool Works, Aurora, Ind.
Avey Drilling Machine Co., Cincinnati
Barnes Co., W. F. & John, Rockford, Ill.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Taylor & Fenn Co., Hartford, Conn.

Drilling and Tapping Attachments

Aurora Tool Works, Aurora, Ind.
Barnes Co., W. F. & John, Rockford, Ill.
McCroskey Tool Corporation, Meadville, Pa.
Reed Co., Francis, Worcester, Mass.

Drills, Portable Electric

Hisey-Wolf Machine Co., Cincinnati
Independent Pneumatic Tool Co., 600 W.
Jackson Blvd., Chicago
Wisconsin Electric Co., Racine, Wis.

Drill & Chuck for Square & Hex. Holes

Watts Bros. Tool Works, Turtle Creek, Pa.

Dust Handling Equipment

Knickerbocker Co., Jackson, Mich.

Emery Stands

Hount Co., J. G., Everett, Mass.

Emery Wheel Dressers and Cutters

Taylor & Fenn Co., Hartford, Conn.

Facing Heads, Automatic

Mummert-Dixon Co., Hanover, Pa.

Feeders, Oil and Soda Water

New Britain Machine Co., New Britain, Conn.

Forges

Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Forgings, Hollow Bored

American Hollow Boring Co., Erie, Pa.

Furnaces

Hennett Metal Treating Co., Elmwood, Conn.

Furniture, Machine Shop

New Britain Machine Co., New Britain, Conn.

Grinding Machines, Bench

Hount Co., J. G., Everett, Mass.
Hisey-Wolf Machine Co., Cincinnati

Grinding Machines, Cutter, Reamer and Tool

Hount Co., J. G., Everett, Mass.
Manhattan Machine & Tool Works, Grand
Rapids, Mich.
Mummert-Dixon Co., Hanover, Pa.
National Acme Co., Cleveland
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Norman Co., Grand Rapids, Mich.

Grinding Machines, Cylinder

Heald Machine Co., Worcester, Mass.
Schmidt Co., B. L., Davenport, Iowa
Whitney & Son, Baxter D., Winchendon, Mass.

Grinding Machines, Cylindrical

Manhattan Machine & Tool Works, Grand
Rapids, Mich.
Schmidt Co., B. L., Davenport, Iowa
Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die

Manhattan Machine & Tool Works, Grand
Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Norman Co., Grand Rapids, Mich.

Grinding Machines, Drill

Wilmarth & Norman Co., Grand Rapids, Mich.

Grinding Machines, Face

Taylor & Fenn Co., Hartford, Conn.

Classified Finding Index

Grinding Machines, Internal

Greenfield Tap & Die Corp., Greenfield, Mass.
Heald Machine Co., Worcester, Mass.
Schmidt Co., B. L., Davenport, Iowa.
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio
Whitney & Son, Baxter D., Winchendon, Mass.
Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Oilstone

Mummert-Dixon Co., Hanover, Pa.

Grinding Machines, Portable

Hisey-Wolf Machine Co., Cincinnati
Independent Pneumatic Tool Co., 6881 W.
Jackson Blvd., Chicago
Mummert-Dixon Co., Hanover, Pa.
Wisconsin Electric Co., Racine, Wis.

Grinding Machines, Snagging

Manhattan Machine & Tool Works, Grand
Rapids, Mich.

Grinding Machines, Surface

Heald Machine Co., Worcester, Mass.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Universal

Greenfield Tap & Die Corp., Greenfield, Mass.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

Hack Saw Machines

Armstrong-Blum Mfg. Co., 341 N. Francisco
Av., Chicago
Racine Tool & Machine Co., Racine, Wis.

Hammers, Air

Independent Pneumatic Tool Co., 600 W.
Jackson Blvd., Chicago

Hammers, Belt & Motor Driven

Barr, H. Edall, Erie, Pa.
Beaudry & Co., Boston
United Hammer Co., Boston

Hammers, Power

Beaudry & Co., Boston
Quickwork Co., St. Marys, Ohio
United Hammer Co., Boston

Hammers, Riveting

Independent Pneumatic Tool Co., 600 W.
Jackson Blvd., Chicago
Quickwork Co., St. Marys, Ohio

Heads, Dividing

Dickow Machinery Co., Fred C., 2105 W.
Lake St., Chicago
Willard-Middletown Machine Co., Middle-
town, Ohio

Hoists, Electric

Thomas Elevator Co., 31 S. Hoyne Ave.,
Chicago

Hoists, Portable

Canton Foundry & Machine Co., Canton, Ohio

Jigs, Fixtures, Tools

Craftman Tool Co., Connaut, O.

Joints, Universal

Cooper Flexible Transmission Co., Inc.,
Brooklyn

Keyseating Machines

Hesher-Smith Co., East Liverpool, Ohio
Chattanooga Mch. Co., Chattanooga, Tenn.
National Machine Tool Co., Cincinnati
Whitney Mfg. Co., Hartford, Conn.

Lathe Accessories and Attachments

Fay & Scott, Dexter, Maine
McCrone Tool Corporation, Meadville, Pa.

Lathes, Automatic

National Acme Company, Cleveland

Lathes, Bench

Blount Co., J. G., Everett, Mass.

Lathes, Engine

Barnes Co., W. F. & John, Rockford, Ill.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Fay & Scott, Dexter, Maine
Mueller Machine Tool Co., Cincinnati
Steptoe Co., John, Cincinnati, O.

Lathes, Foot Power

Barnes Co., W. F. & John, Rockford, Ill.

Lathes, Metal Spinning

Prybil Machine Co., P., 512 W. 41st, N. Y.

Lathes, Speed and Hand

Blount Co., J. G., Everett, Mass.

Lockers, Shelving and Cupboards, Steel

Terrell's Equipment Co., Grand Rapids, Mich.

Mandrels, Expanding

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Mandrels, Solid

Nicholson & Co., W. H., Wilkes-Barre, Pa.

Metal Cutting Machines, Sheet

Quickwork Co., St. Marys, Ohio

Milling Attachments

Burke Machine Tool Co., Connaut, Ohio
Willard-Middletown Machine Co., Middle-
town, Ohio

Milling Machines, Bench

Burke Machine Tool Co., Connaut, Ohio
Carter & Hakes Mch. Co., W. Winsted, Conn.

Milling Machines, Hand

Burke Machine Tool Co., Connaut, Ohio
Carter & Hakes Mch. Co., W. Winsted, Conn.
Steptoe Co., John, Cincinnati, O.
U. S. Machine Tool Co., Cincinnati, O.
Whitney Mfg. Co., Hartford, Conn.

Milling Machines, Horizontal

Reaman & Smith Co., Providence, R. I.
Steptoe Co., John, Cincinnati, O.

Milling Machines, Plain

Reaman & Smith Co., Providence, R. I.
Burke Machine Tool Co., Connaut, Ohio
Steptoe Co., John, Cincinnati, O.

Milling Machines, Portable

Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia

Milling Machines, Universal

Steptoe Co., John, Cincinnati, O.

Milling Machines, Vertical

Reaman & Smith Co., Providence, R. I.
Burke Machine Tool Co., Connaut, Ohio
Taylor & Fenn Co., Hartford, Conn.

Motors, Electric

Reliance Electric & Eng. Co., Cleveland
Wisconsin Electric Co., Racine, Wis.

Oil Cups

Gits Bros. Mfg. Co., 1940 S. Kilbourn Av.,
Chicago
Tucker, W. C. & F. C., Hartford, Conn.

Classified Finding Index

Oil Extractors

Curtis, Albert B., Estate, Worcester, Mass.

Oil Hole Covers

Tucker, W. C. & F. C., Hartford, Conn.

Pattern Shop Machinery

Pyribil Machine Co., P. 512 W. 41st, N. Y.
Fowley Mfg. Co., John T., Cincinnati

Pipe Bending Machines

Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia

Pipe Cutting and Threading Machines

Signal & Keeler Mch. Wks., Edwardsville, Ill.

Piston and Piston Ring Machines

National Acme Company, Cleveland.

Planer Attachment, Radius

Underwood Corp., H. B., Philadelphia

Planer Tools, Circular

Underwood Corp., H. B., Philadelphia

Planers

Ohio Machine Tool Co., Kenton, O.

Planers, Valve Seat, Portable

Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia

Polishing and Buffing Machines

Hount Co., J. G., Everett, Mass.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Hisey-Wolf Machine Co., Cincinnati
Independent Pneumatic Tool Co., 800 W. Jackson Blvd., Chicago
New Britain Machine Co., New Britain, Conn.
Pyribil Machine Co., P. 512 W. 41st, N. Y.
Wilmarth & Norman Co., Grand Rapids, Wis.
Wisconsin Electric Co., Racine, Wis. (Mich.)

Presses, Arbor

Atlas Press Co., Kalamazoo, Mich.
Barnes Co., W. F. & John, Rockford, Ill.
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Presses, Broaching

Atlas Press Co., Kalamazoo, Mich.
Lourie Mfg. Co., Springfield, Ill.

Presses, Foot

Atlas Press Co., Kalamazoo, Mich.
Rockford Iron Works, Rockford, Ill.
Taylor & Fenn Co., Hartford, Conn.

Presses, Power

Hendley & Whittemore Co., Beloit, Wis.
Rockford Iron Works, Rockford, Ill.
Willard-Middletown Machine Co., Middletown, Ohio

Presses, Punch

Leathwaite Mch. Co., T. H., 417 E. 31st, N. Y.
Lourie Mfg. Co., Springfield, Ill.
Rockford Iron Works, Rockford, Ill.

Presses, Screw

Atlas Press Co., Kalamazoo, Mich.
Barnes Co., W. F. & John, Rockford, Ill.
Manhattan Machine & Tool Works, Grand Rapids, Mich.
Towsley Mfg. Co., John T., Cincinnati

Pulley Machinery

Avey Drilling Machine Co., Cincinnati

Pulleys, Iron, Solid and Split

Pyott Foundry Co., 328 N. Sangamon St., Chicago

Punch Press Feeds

Rockford Iron Works, Rockford, Ill.

Punch, Shear and Bender, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Leathwaite Mch. Co., T. H., 417 E. 31st St., New York
Whitney Metal Tool Co., Rockford, Ill.

Punches, Power

Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies

Hendley & Whittemore Co., Beloit, Wis.
Leathwaite Mch. Co., T. H., 417 E. 31st, N. Y.
Rockford Iron Works, Rockford, Ill.

Quenching Baths

Hennett Metal Treating Co., Elmwood, Conn.

Racks, Bar Stock

New Britain Machine Co., New Britain, Conn.

Reamers, Adjustable

Greenfield Tap & Die Corp., Greenfield, Mass.
McCroskey Tool Corporation, Meadville, Pa.
Schellenbach-Hunt Tool Co., Cincinnati

Reamers, Cylinder

McCroskey Tool Corporation, Meadville, Pa.

Reamers, Solid

McCroskey Tool Corporation, Meadville, Pa.

Reels, Extension

Cincinnati Specialty Mfg. Co., Cincinnati, O.

Riveting Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Rod Cutters

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Leathwaite Mch. Co., T. H., 417 E. 31st, N. Y.
Tucker, W. C. & F. C., Hartford, Conn.

Scraping Machines, Hand & Pneumatic

Anderson Brothers Mfg. Co., Rockford, Ill.

Screw Driving Machines, Automatic

Reynolds Machine Co., Mansfield, Ohio

Screw Driving Machines, Portable Electric

Hisey-Wolf Machine Co., Cincinnati

Screw Machines, Automatic

National Acme Company, Cleveland
New Britain Mch. Co., New Britain, Conn.

Screw Machines, Auxiliary

National Acme Company, Cleveland

Screws, Cap and Set

National Acme Company, Cleveland

Second-Hand Machinery Dealers

Austin Mch. Corp., 609 Railway Exchange Bldg., Chicago
Badger-Packard Mch. Co., Milwaukee, Wis.
Rath & Co., Cyril J., Cleveland, O.
Higgs-Watterson Co., Cleveland
Botwinik Brothers, New Haven, Conn.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Eastern Mch. & Equipment Co., Philadelphia
Easley Machinery Co., E. L., 555 Washington Blvd., Chicago
Graves Mch. Exchange, Jersey City, N. J.
Harris Bros. Co., W. 35th & Iron, Chicago
Hill, Clarke & Co., 649 W. Washington Blvd., Chicago
Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.

Classified Finding Index

Second-Hand Mch. Dealers—Cont'd

Jones Machine Tool Co., Cincinnati
Little Co., W. P., Cleveland
Lucas & Son, Inc., Bridgeport, Conn.
McCabe Lathes & Machinery Corp., J. J.,
140 Broadway, New York
McCabe & Sheeran Machinery Corporation,
50 Church St., New York
McDonald Machinery Co., St. Louis
McMullen Mch. Co., Grand Rapids, Mich.
Marr Machinery Corporation, Pittsburgh, Pa.
Molitor Mch. Co., Chas., 118 S. Clinton,
Chicago
New York Mch. Exchange, 50 Church St.,
New York
Niles-Bement-Pond Co., 111 Broadway, N. Y.
Norton Broadway Mch. Co., Cincinnati, O.
O'Brien Machinery Co., Philadelphia
Osborne & Sexton Mch. Co., Columbus, O.
Prybil Machine Co., P., 512 W. 41st, N. Y.
Randie Machinery Co., Cincinnati
Reeve-Fritts Co., 37 S. Desplaines, Chicago
Reliance Mch. Sales Co., Pittsburgh, Pa.
Riverside Machinery Depot, Detroit, Mich.
Rowlington, D. E., Utica, N. Y.
Russell Machine Co., Pittsburgh, Pa.
Scott-Bansbach Mch. Co., 32 N. Clinton St.,
Chicago
Simmons Machine Co., Albany, N. Y.
Stoehr Mch. Co., A. M., 844 N. Wells St.,
Chicago
Strong, Carlisle & Hammond Co., Cleveland
Toomey, Inc., Frank, Philadelphia
Tubor, Velick & Co., Inc., Lake & Desplaines
Sts., Chicago
Warner H. D., Hartford, Conn.
Wayne Mch. Co., Fort Wayne, Ind.
Winter, Herman L., Philadelphia
White Mch. Co., A. D., 108 N. Jefferson
St., Chicago

Shafts, Flexible

Haskins Co., R. G., 29 S. Desplaines St.,
Chicago
Stow Flexible Shaft Co., Philadelphia

Shafts, Steel

American Hollow Boring Co., Erie, Pa.

Shaping Machines

Columbia Machine Tool Co., Hamilton, Ohio
Hollingsworth Mch. Tool Co., Covington, Ky.
Ohio Machine Tool Co., Kenton, Ohio
Osborne & Sexton Mch. Co., Columbus, O.
Rhodes Mfr. Co., Hartford, Conn.
Smith & Mills Co., Cincinnati
Stephens Co., John, Cincinnati, O.
Universal Machine & Tool Co., Canton, O.

Shears, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco
Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Kiddier Mfg. Co., J. P., Burlington, Vermont
Lewthwaite Machine Co., T. H., 417 E. 31st
St., New York
Quickwork Co., St. Marys, Ohio
Tucker, W. C. & F. C., Hartford, Conn.
Whitney Metal Tool Co., Rockford, Ill.

Shears, Power

Hendley & Whittemore Co., Beloit, Wis.
Quickwork Co., St. Marys, Ohio

Sheet Metal Working Machinery

Quickwork Co., St. Marys, Ohio

Slotting Machines

Rhodes Mfg. Co., Hartford, Conn.

Sprockets

Cullman Wheel Co., 1344 Altgeld St., Chicago

Straightening Machines

Towsley Mfg. Co., John T., Cincinnati
Whitney Metal Tool Co., Rockford, Ill.

Swaging Machines

Etna Mfg. Co., Toledo, Ohio

Tap Extractors

Walton Co., Hartford, Conn.

Tapping Machines and Attachments

Avey Drilling Machine Co., Cincinnati
Beaman & Smith Co., Providence, R. I.
Burke Machine Tool Co., Connecticut, Ohio
Greenfield Tap & Die Corp., Greenfield, Mass.
McCrossky Tool Corporation, Meadville, Pa.
McKert-Safer Co., Erie, Pa.
Whitney Mfg. Co., Hartford, Conn.
Whitney Metal Tool Co., Rockford, Ill.

Taps and Dies

National Acme Company, Cleveland

Threading Machines, Bolt and Stud

National Acme Company, Cleveland

Threading Tools

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago
National Acme Company, Cleveland

Tool Holders

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tools, Boring

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tools, Box

Biggs, P. H., Cleveland, O.

Tools, Lathes and Planer

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tools, Machinists'

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Trucks, Machine Shop

New Britain Machine Co., New Britain, Conn.
Towsley Mfg. Co., John T., Cincinnati

Turntables

Canton Foundry & Machine Co., Canton, O.

Turret Tool Posts

Fay & Scott, Dexter, Maine

Valve Grinders

Independent Pneumatic Tool Co., 600 W.
Jackson Blvd., Chicago

Valves

Powell Co., Wm., Cincinnati

Valve Seat Planing Machines, Portable

Underwood Corp., H. B., Philadelphia

Vises, Drilling Machine

Armstrong-Blum Mfg. Co., 341 N. Francisco
Av., Chicago
Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago
Carter & Hakes Mch. Co., W. Winsted, Conn.
Germanow-Simon Mch. Wks., Rochester, N. Y.
Thomas Elevator Co., 31 S. Hoyle Ave.,
Chicago

Vises, Machinists'

New Britain Machine Co., New Britain, Conn.

Vises, Milling Machine

Carter & Hakes Mch. Co., W. Winsted, Conn.
Germanow-Simon Mch. Wks., Rochester, N. Y.

Vises, Shaper

Columbia Machine Tool Co., Hamilton, Ohio

Wood Working Machinery

Hendley & Whittemore Co., Beloit, Wis.
New Britain Machine Co., New Britain, Conn.
Prybil Machine Co., P., 512 W. 41st, N. Y.
Towsley Mfg. Co., John T., Cincinnati
Whitney & Son, Baxter D., Winchendon, Mass.

Index of Advertisers

A

Abbott Ball Co.....	46
American Hollow Boring Co.....	18
Anderson Bros. Mfg. Co.....	48
Armstrong-Blum Mfg. Co.....	39
Armstrong Bros. Tool Co.....	18
Atlas Press Co.....	54
Aurora Tool Works.....	9
Austin Machinery Corporation...	71
Avey Drilling Machine Co.....	11

B

Badger-Packard Machinery Co...	81
Barnes Co., W. F. & John.....	7
Barr, H. Edsl.....	44
Bath & Co., Cyril J.....	77
Beaman & Smith Co.....	15
Beaudry & Co.....	
Bennett Metal Treating Co.....	50
Biggs, P. H.....	25
Biggs-Watterson Co.....	
Biggall & Keeler Mche. Works...	47
Blount Co., J. G.....	59
Botwinik Brothers.....	67
Brown Machinery Co.....	78
Brownell Machinery Co.....	70
Buchanan Chemical Co., C. G... 50	
Bucher-Smith Co.....	64
Bunting Brass & Bronze Co.....	61
Burke Machine Tool Co.....	10-34

C

Canedy-Otto Mfg. Co.....	13
Canton Foundry & Mche. Co....	48
Carter & Hakes Machine Co....	36
Chattanooga Machinery Co.....	63
Cincinnati Specialty Mfg. Co.....	65
Columbia Machine Tool Co.....	26
Cooper Flexible Transmission Co., Inc.....	29
Craftsman Tool Co.....	35
Cullman Wheel Co.....	30
Curtis, Albert B., Estate.....	28

D

Davis & Hemphill.....	67
Dickow Mchy. Co., Fred C.....	32

E

Eastern Mchy. & Equipment Co.	89
Esley Machinery Co., E. L.	69
Etna Manufacturing Co.....	

F

Fay & Scott.....	22
------------------	----

G

Gits Bros. Mfg. Co.....	60
Grant Mfg. & Machine Co.....	46
Graves Machinery Exchange.....	90
Greenfield Tap & Die Corp.....	57

H

H & H Machine Co.....	67
Hamilton Caster & Mfg. Co.....	29
Harris Brothers Co.....	87
Haskins Co., R. G.....	58
Heald Machine Co.....	4
Hendley & Whittemore Co.....	43
Hill, Clarke & Co., of Chicago...	93
Hisey-Wolf Machine Co.....	52-53
Hollingworth Machine Tool Co...	24

I

Independent Pneumatic Tool Co.	14
--------------------------------	----

J

Jacobs Manufacturing Co.....	17
Johnson Bronze Co.....	58
Johnson & Sons Mchy. Co., Wm. C.	80
Jones Machine Tool Co.....	72

K

Kidder Mfg. Co., J. F.....	42
Knickerbocker Co.....	51
Knowlton Machine Co.....	76

L

Lewthwaite Machine Co., T. H.	40
Little Co., W. P.....	74
Louie Mfg. Co.....	54
Lucas & Son, Inc.....	67

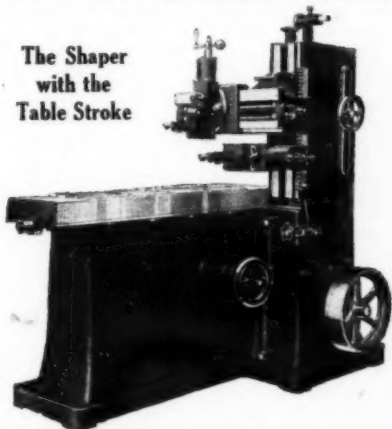
M

McCabe Lathe & Machinery Corporation, J. J.....	85
McCabe & Sheeran Machry Corp.	92

A 24" Shaper—*plus*

A larger producer than a ram-stroke shaper,
with a wider range and greater accuracy

The Shaper
with the
Table Stroke



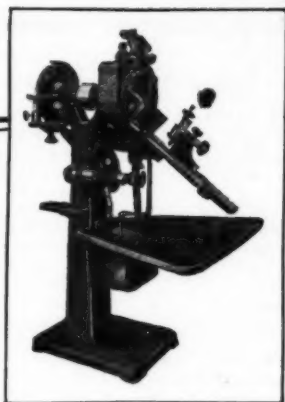
THE 24" UNIVERSAL is a shaper *plus*, because (1) it does the usual shaper work more rapidly and accurately, (2) its range extends beyond that of the ordinary shaper, up to and including the work of the small open-side planer, and (3) it is built "for keeps" by tool makers of long experience. Shafts equipped with SKF bearings. Has four speeds of 7-20-30-40 table strokes a minute. Its speed, capacity for heavy cuts, planer accuracy and exceptional range place it in a class wholly by itself.

Illustrated description gladly furnished upon request

Universal Machine & Tool Co.
Canton, Ohio

Index of Advertisers—Continued

McCrosky Tool Corporation.....	23	Rowlingon, D. E.....	76
McDonald Machinery Company..	83	Russell Machine Co.....	73
McMullen Machinery Co.....	86		
Manhattan Mche. & Tool Works	55	S	
Marr Machinery Co., J. C.....	69	Schellenbach-Hunt Tool Co.....	14
Molitor Machinery Co., Chas. —	79	Schmidt Co., B. L.....	57
Mueller Machine Tool Co.....	20	Scott-Bansbach Machinery Co....	80
Mummert-Dixon Co.	32	Scully-Jones & Co.....	62
		Second-Hand Machinery.....	67 to 93
N		Sharp Spark Plug Co.....	67
National Acme Company.....	3	Simmons Machine Co., Inc.....	84
National Machine Tool Co.....	62	Smith Machinery Co., H. A.....	78
Nelson-Blanck Mfg. Co.....	8	Smith & Mills Co.....	26
New Britain Machine Co.....	104	Stephoe Company, John.....	20
New York Machinery Exchange..	88	Stoehr Machinery Co., A. M.	82
Ney Company, J. M.....	21	Strong, Carlisle & Hammond Co.	83
Nicholson & Co., W. H.....	64		
Niles-Bement-Pond Co.....	68-69	T	
Norton Broadway Machinery Co.	80	Taylor & Fenn Co.....	37
		Terrell's Equipment Co.....	31
O		Thomas Elevator Co.....	12
O'Brien Machinery Co.....	76	Thompson Grinder Co.....	
Ohio Machine Tool Co.....	24	Toomey, Inc., Frank.....	72
Osborne & Sexton Mchy.Co.....	91	Towsley Mfg. Co., John T.....	94
		Tubor, Velick & Co., Inc.....	74
P		Tucker, W. C. & F. C.....	60
Pedrick Tool & Machine Co.....	49		
Peter Bros. Mfg. Co.....	16-38	U	
Powell Co., The Wm.....	65	Underwood Corporation, H. B....	66
Prybil Machine Co., P.....	22-84	United Hammer Co.....	44
Pyott Foundry Co.....	28	United States Drill Head Co.....	6
		United States Machine Tool Co.	36
Q		Universal Machine & Tool Co....	101
Quickwork Co.	38		
		W	
R		Walton Co.....	16
Racine Tool & Machine Co.....	41	Warner, H. D.....	82
Randle Machinery Co.....	82	Watts Bros. Tool Works.....	12
Reed Co., Francis.....	8	Wayne Machinery Co.	86
Reeve-Fritts Company.....	79	White Machinery Co., A. D....	70
Reliance Elect. & Engineering Co.	2	Whitney Mfg. Co.	33
Reliance Machinery Sales Co....	67	Whitney Metal Tool Co.....	40
Reynolds Machine Company.....	45	Whitney & Son, Baxter D.....	56
Rhodes Manufacturing Co.....	27	Willard-Middletown Mche. Co.	34
Rickert-Shafer Co.....	19	Wilmarth & Morman Co.	103
Riverside Machinery Depot.....	75	Winterer, Herman L.....	81
Rockford Iron Works.....	42	Wisconsin Electric Co.....	5



Holes cost less when
drills are ground on
Improved New Yankee
Drill Grinders.

Wilmarth & Morman Co.

*For 22 years manufacturers of Precision Surface, Uni-
versal Cutter and Tool and New Yankee Drill Grinders.*

**1185 MONROE AVENUE, N. W.
GRAND RAPIDS, MICHIGAN**

"New Britain" **Shop Furniture**

Bench Legs

Pressed steel; better benches at lower cost.

Bench Drawers

All steel, or wood back, bottom and front.

Work Stands

All steel, with two or three trays.

Portable Vise Stands

Work benches and tool cabinets on wheels.

Adjustable Stools

Adjust height of bench hand to his work.

Revolving Screw Racks

Hold 500 to 600 lbs.—adjustable compartments.

Bar Stock Racks

Keep bar stock neatly piled and assorted.

Tote Boxes

Stacking and Nesting; electrically welded.

Portable Lathe Pans

Big capacity; easily moved; save the oil.

And Others

All most carefully designed, so that each item of "New Britain" Shop Furniture will give the utmost of service, facilitate production, and save time and labor far beyond what is possible with the usual make-shift devices.

Investigation costs nothing; what do you need?

The New Britain Machine Company

**"Shop Furniture
Originators"**



**New Britain,
Conn. U.S.A.**

